

Combined Application for Certificate of Environmental  
Compatibility, Public Convenience and Necessity and for a  
Base Load Review Order for the Construction and  
Operation on a Nuclear Facility at Jenkinsville, South  
Carolina

BEFORE THE  
PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA

## COVERSHEET

DOCKET

NUMBER: 2008 - 196 - E

(Please type or print)

Submitted by: Matthew W. GissendannerSC Bar Number: 76027Address: SCANA Corp.Telephone: 803-217-5359220 Operation Way MC C222Fax: 803-217-7810Cayce, SC 29033

Other: \_\_\_\_\_

Email: matthew.gissendanner@scana.com

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## DOCKETING INFORMATION (Check all that apply)

☐ Emergency Relief demanded in petition ☐ Request for item to be placed on Commission's Agenda expeditiously

☐ Other: \_\_\_\_\_

| INDUSTRY (Check one)                                 | NATURE OF ACTION (Check all that apply)            |  |  |
|--|--|--|--|
| <input checked="" type="checkbox"/> Electric         | <input type="checkbox"/> Affidavit                 | <input checked="" type="checkbox"/> Letter                 | <input type="checkbox"/> Request                   |
| <input type="checkbox"/> Electric/Gas                | <input type="checkbox"/> Agreement                 | <input type="checkbox"/> Memorandum                        | <input type="checkbox"/> Request for Certification |
| <input type="checkbox"/> Electric/Telecommunications | <input type="checkbox"/> Answer                    | <input type="checkbox"/> Motion                            | <input type="checkbox"/> Request for Investigation |
| <input type="checkbox"/> Electric/Water              | <input type="checkbox"/> Appellate Review          | <input type="checkbox"/> Objection                         | <input type="checkbox"/> Resale Agreement          |
| <input type="checkbox"/> Electric/Water/Telecom.     | <input type="checkbox"/> Application               | <input type="checkbox"/> Petition                          | <input type="checkbox"/> Resale Amendment          |
| <input type="checkbox"/> Electric/Water/Sewer        | <input type="checkbox"/> Brief                     | <input type="checkbox"/> Petition for Reconsideration      | <input type="checkbox"/> Reservation Letter        |
| <input type="checkbox"/> Gas                         | <input type="checkbox"/> Certificate               | <input type="checkbox"/> Petition for Rulemaking           | <input type="checkbox"/> Response                  |
| <input type="checkbox"/> Railroad                    | <input type="checkbox"/> Comments                  | <input type="checkbox"/> Petition for Rule to Show Cause   | <input type="checkbox"/> Response to Discovery     |
| <input type="checkbox"/> Sewer                       | <input type="checkbox"/> Complaint                 | <input type="checkbox"/> Petition to Intervene             | <input type="checkbox"/> Return to Petition        |
| <input type="checkbox"/> Telecommunications          | <input type="checkbox"/> Consent Order             | <input type="checkbox"/> Petition to Intervene Out of Time | <input type="checkbox"/> Stipulation               |
| <input type="checkbox"/> Transportation              | <input type="checkbox"/> Discovery                 | <input type="checkbox"/> Prefiled Testimony                | <input type="checkbox"/> Subpoena                  |
| <input type="checkbox"/> Water                       | <input type="checkbox"/> Exhibit                   | <input type="checkbox"/> Promotion                         | <input type="checkbox"/> Tariff                    |
| <input type="checkbox"/> Water/Sewer                 | <input type="checkbox"/> Expedited Consideration   | <input type="checkbox"/> Proposed Order                    | <input type="checkbox"/> Other:                    |
| <input type="checkbox"/> Administrative Matter       | <input type="checkbox"/> Interconnection Agreement | <input type="checkbox"/> Protest                           |  |
| <input type="checkbox"/> Other:                      | <input type="checkbox"/> Interconnection Amendment | <input type="checkbox"/> Publisher's Affidavit             |  |
|  | <input type="checkbox"/> Late-Filed Exhibit        | <input checked="" type="checkbox"/> Report                 |  |



Matthew W. Gissendanner  
Assistant General Counsel

matthew.gissendanner@scana.com

November 4, 2016

**VIA ELECTRONIC FILING**

The Honorable Jocelyn G. Boyd  
Chief Clerk/Administrator  
**Public Service Commission of South Carolina**  
101 Executive Center Drive  
Columbia, South Carolina 29210

RE: Quarterly Report of SCE&G Concerning Construction of V.C. Summer Nuclear  
Station Units 2 and 3

Dear Ms. Boyd:

Enclosed please find informational copies of South Carolina Electric & Gas Company's Quarterly Report (the "Report") for the period ending September 30, 2016, related to the construction of V.C. Summer Nuclear Station Units 2 and 3. This Report is being filed with the South Carolina Office of Regulatory Staff pursuant to the Base Load Review Act, S.C. Code Ann. § 58-33-277 (2015) and the provisions of Order No. 2009-104(A) of the Public Service Commission of South Carolina.

If you have any questions or concerns, please do not hesitate to contact me.

Very truly yours,

Matthew W. Gissendanner

MWG/kms  
Enclosures

cc: Shannon Bowyer Hudson, Esquire  
M. Anthony James  
Dawn Hipp  
(all via electronic mail and U.S. First Class Mail w/enclosures)

## **V.C. Summer Nuclear Station Units 2 & 3**

### **Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2016**

#### **I. Introduction and Summary**

##### **1. Introduction**

This quarterly report concerning the status of the construction of V.C. Summer Nuclear Station (VCSNS) Units 2 and 3 (the Units) is submitted by South Carolina Electric & Gas Company (SCE&G or the Company) to the Public Service Commission of South Carolina (the Commission) and the South Carolina Office of Regulatory Staff (ORS). It is submitted in satisfaction of the requirements of S.C. Code Ann. § 58-33-277 (2015) and the terms of Commission Order No. 2009-104(A). All amounts set forth in this Quarterly Report are based on SCE&G's existing 55% interest, except where expressly stated to be based upon 100% of the cost.

The construction and capital cost schedules and forecasts presented in this report are compared against those approved in Order No. 2015-661 dated September 10, 2015.

##### **2. The Update Proceeding**

In September 2016, SCE&G entered into a settlement agreement (Settlement) concerning its petition pending before the Commission for updates to the construction and capital cost schedules for the Units. The settling parties included ORS, the Central Electric Power Cooperative, Inc., the Electric Cooperatives of South Carolina, Inc., Frank Knapp, Jr., and South Carolina Energy Users Committee. The settlement agreement is subject to approval by the Commission.

The settling parties agreed to support approval of the updated construction schedule which reflects the guaranteed substantial completion dates set in the October 2015 Amendment (Amendment) to the Engineering, Procurement and Construction Agreement (EPC Contract) with Westinghouse Electric Company (Westinghouse or WEC). Those completion dates are August 2019 and August 2020 for Units 2 and 3, respectively.

The settling parties also agreed to support the inclusion of an additional \$831 million in the capital cost schedule for the Units, which includes costs associated with the execution of the option to transfer all but a limited group of remaining EPC Contract costs to the

Fixed Price cost category (Option). In addition, the settling parties agreed to support Commission approval of the execution of the Option. SCE&G agreed to reduce the Return on Equity (ROE) used in calculating revised rates sought on and after January 1, 2017 (and until such time as the Units are completed) from 10.50 percent to 10.25 percent. The revised ROE will be applied prospectively. Additionally, SCE&G agreed that it will not file future requests to amend capital cost schedules prior to January 28, 2019. The Settlement reflects a cost for the Units in future dollars of \$7.7 billion.

The Commission held its hearing on SCE&G's update petition, and on the Settlement, on October 5, 12 and 13, 2016. By statute, the Commission is required to issue its order by late November 2016.

The Settlement provides for additional reporting related to labor productivity, schedules and milestones. Those matters will be reflected in the quarterly report for the fourth quarter of 2016 if adopted by the Commission.

### 3. Structure of Report and Appendices

The current reporting period is the quarter ending September 30, 2016. The report is divided into the following sections:

- Section I: Introduction and Summary;
- Section II: Progress of Construction of the Units;
- Section III: Anticipated Construction Schedules;
- Section IV: Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B)(6) (the Inflation Indices);
- Section V: Updated Schedule of Anticipated Capital Costs; and
- Section VI: Conclusion.

**Appendices 1, 2, and 4** to this report contain detailed financial, milestone and other information updating the schedules approved by the Commission in Order No. 2015-661. For reference purposes, **Appendix 3** provides a copy of the capital cost schedule for the project as approved in Order No. 2015-661. **Appendix 5** provides a list of the License Amendment Requests (LARs) filed by SCE&G with the Nuclear Regulatory Commission (NRC).

Attached to the end of the report is a glossary of acronyms and defined terms used.

#### 4. Construction Schedule and Milestones

**Milestones.** There are 33 Base Load Review Act (BLRA) milestones left to complete with 33 milestones delayed by fifteen months or less compared to the schedule approved by the Commission in Order No. 2015-661. Three milestones were completed during this quarter.

**Construction Costs and Cost Forecasts.** Spending through December 31, 2016 in current dollars is forecasted to be approximately \$389 million less than the capital cost schedule approved in Order No. 2015-661. These cost forecasts include the cost increases agreed to in the 2015 Amendment to the EPC Contract as well as the exercise of the Fixed Price option that the Amendment grants to SCE&G and its partner in the project, Santee Cooper.

**Cost Comparisons.** In Order No. 2009-104(A), the Commission recognized that forecasts of Allowance for Funds Used During Construction (AFUDC) and escalation would vary over the course of the project and required those forecasts to be updated with each quarterly report. Escalation indices were issued in May 2016 for the period of July through December 2015 and have been used in forecasting the construction costs for the project that are presented here.

**Chart A** below compares the current capital cost forecast to the forecast presented in the last quarterly report. This chart shows a reduction in Gross Construction Costs of \$13.5 million over the life of the project. With each quarterly update, a quarter that had been subject to the five-year escalation rate becomes subject to the one-year rate. The figures reported on **Chart A** also include the effect of calculating escalation on an updated cash flow projection for the project.

**Chart A: Reconciliation of Capital Cost (\$000)**

| <u>Forecast Item</u>              | <u>Projected @ 09/30/16<br/>(Five-Year Average<br/>Escalation Rates)</u> | <u>Projected @ 06/30/16<br/>(Five-Year Average<br/>Escalation Rates)</u> | <u>Change</u>     |
|-----------------------------------|--|--|-------------------|
| Gross Construction                | \$7,673,698  | \$7,687,177  | \$(13,479)        |
| Less: AFUDC                       | \$340,234  | \$338,127  | \$2,107           |
| Total Project Cash Flow           | \$7,333,465  | \$7,349,050  | \$(15,585)        |
| Less: Escalation                  | \$528,714  | \$528,518  | 196               |
| <b>Capital Cost, 2007 Dollars</b> | <b>\$6,804,751</b>   | <b>\$6,820,532</b>   | <b>\$(15,781)</b> |

**Chart B** compares the current capital cost forecast to the forecast on which the Commission relied in adopting Order No. 2015-661. The cost of the plant in future dollars has increased by approximately \$847 million since Order No. 2015-661 was issued.

**Chart B: Reconciliation of Capital Cost (\$000)**

| <u>Forecast Item</u>              | <u>Projected @<br/>09/30/2016 (Five-<br/>Year Average<br/>Escalation Rates)</u> | <u>As Forecasted and<br/>Approved In Order<br/>No. 2015-661</u> | <u>Change</u>      |
|-----------------------------------|---|---|--------------------|
| Gross Construction                | \$7,673,698   | \$6,826,914   | \$846,784          |
| Less: AFUDC                       | \$340,234   | \$279,790   | \$60,444           |
| Total Project Cash Flow           | \$7,333,465   | \$6,547,124   | \$786,341          |
| Less: Escalation                  | \$528,714   | \$1,300,486   | (\$771,772)        |
| <b>Capital Cost, 2007 Dollars</b> | <b>\$6,804,751</b>  | <b>\$5,246,638</b>  | <b>\$1,558,113</b> |

**Chart C** below shows the current forecast of the cost of the Units compared to the cost forecasts underlying the initial BLRA order, which was issued by the Commission in 2009, and the update orders that the Commission issued subsequently. The decline in capital cost forecasts in 2007 dollars between Order No. 2010-12 and 2011-345 reflects the removal of Owner's contingency amounts from the forecasts as required by the opinion of the Supreme Court of South Carolina in *South Carolina Energy Users Comm. v. South Carolina Pub. Serv. Comm'n*, 388 S.C. 486, 697 S.E.2d 587 (2010). This chart shows that cost of the project in future dollars is approximately \$1.361 billion above the initial forecast.

[Chart C begins on the following page]

**Chart C: Summary of Nuclear Filings (billions of \$)**

| <b><u>Forecast Item</u></b>   | <b><u>Order No.</u><br/><u>2009-</u><br/><u>104(A)</u></b> | <b><u>Order</u><br/><u>No.</u><br/><u>2010-12</u></b> | <b><u>Order</u><br/><u>No.</u><br/><u>2011-345</u></b> | <b><u>Order</u><br/><u>No. 2012-</u><br/><u>884</u></b> | <b><u>Order</u><br/><u>No. 2015-</u><br/><u>661</u></b> | <b><u>Projected</u><br/><u>@</u><br/><u>09/30/2016</u></b> |
|-------------------------------|--|---|--|---|---|--|
| Capital Cost,<br>2007 Dollars | \$4.535  | \$4.535   | \$4.270  | \$4.548   | \$5.247   | <b>\$6.805</b>   |
| Escalation                    | \$1.514  | \$2.025   | \$1.261  | \$0.968   | \$1.300   | <b>\$0.529</b>   |
| Total Project<br>Cash Flow    | \$6.049  | \$6.560   | \$5.531  | \$5.517   | \$6.547   | <b>\$7.333</b>   |
| AFUDC                         | \$0.264  | \$0.316   | \$0.256  | \$0.238   | \$0.280   | <b>\$0.340</b>   |
| <b>Gross<br/>Construction</b> | <b>\$6.313</b>   | <b>\$6.875</b>  | <b>\$5.787</b>   | <b>\$5.755</b>  | <b>\$6.827</b>  | <b>\$7.674</b>   |

### 5. Escalation Rates

As provided in Order No. 2009-104(A), the most current one-year inflation indices are used to escalate costs occurring in the twelve-month period after the date of each quarterly report. The most current escalation indices are found in the Handy-Whitman January 2016 update that was issued in May 2016 and reports data for the period July to December 2015. Those rates are reflected in this report. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates.

As shown on **Appendix 4**, utility construction cost escalation rates were at historically high levels during the period 2005-2008 and have since dropped. Current escalation rates are shown below on **Chart D**.

[Chart D begins on the following page]

**Chart D: Handy-Whitman Escalation Rates**

| <b><u>Escalation Rate Comparison</u></b>       |                      |                     |
|--|----------------------|---------------------|
|  | <b>Jan-June 2015</b> | <b>Jul-Dec 2015</b> |
| <b><u>HW All Steam Index:</u></b>              |                      |                     |
| One-Year Rate                                  | <b>3.27%</b>         | <b>2.58%</b>        |
| Five-Year Average                              | <b>2.90%</b>         | <b>2.79%</b>        |
| Ten-Year Average                               | <b>4.11%</b>         | <b>3.76%</b>        |
| <b><u>HW All Steam/Nuclear Index:</u></b>      |                      |                     |
| One-Year Rate                                  | <b>3.44%</b>         | <b>2.75%</b>        |
| Five-Year Average                              | <b>2.97%</b>         | <b>2.86%</b>        |
| Ten-Year Average                               | <b>4.15%</b>         | <b>3.80%</b>        |
| <b><u>HW All Transmission Plant Index:</u></b> |                      |                     |
| One-Year Rate                                  | <b>1.66%</b>         | <b>1.48%</b>        |
| Five-Year Average                              | <b>1.94%</b>         | <b>1.89%</b>        |
| Ten-Year Average                               | <b>3.59%</b>         | <b>3.11%</b>        |

## 6. AFUDC

Consistent with Order No. 2009-104(A), SCE&G computes AFUDC based on the Federal Energy Regulatory Commission (FERC) approved methodology as applied to the balance of Construction Work in Progress (CWIP) that is outstanding between rate adjustments. SCE&G's projected AFUDC rate is currently 5.82%, compared to the rate of 5.68% that applied when Order No. 2015-661 was issued.

## 7. Compliance with the Commission-Approved Cumulative Project Cash Flow Target

The current Cumulative Project Cash Flow target for the project was adopted by the Commission in Order No. 2015-661. In Order No. 2009-104(A), the Commission provided that the applicable Cumulative Project Cash Flow target would be adjusted with each quarterly report to reflect updated escalation data.

**Appendix 2** provides the Commission-approved Cumulative Project Cash Flow target updated for current escalation data. The cash flow targets through December 2015 have been updated to reflect actual escalation rates. The cash flow targets for the first quarter of 2016 and beyond have been updated based on the most recently available inflation indices, which for purposes of this report, are the indices provided in May 2016



that report data for the period July through December 2015. When final actual indices for 2016 become available, the cash flow data for 2016 will be revised to reflect the actual escalation rates.

**Appendix 2** compares the approved Cumulative Project Cash Flow target to the current cumulative cash flow schedules for the project, which include actual costs where available and SCE&G's working forecasts of annual cash flows for future years.

## **II. Progress of Construction of the Units**

### **A. Fluor Transition**

During the period, Fluor continued to implement changes to streamline processes and implement performance improvements based on its Functional Area Assessments (FAAs). Fluor's review of the Integrated Project Schedule (IPS) is ongoing and review and issuance of the plan by WEC is expected to take place around the end of 2016.

Fluor is steadily augmenting the on-site work force. During the period, Fluor was recruiting, training and deploying approximately 150 net new workers per month. The current staffing for the night or back shift is approximately 485 craft workers. While labor is generally available in the relevant market, the recruiting and retention of craft labor continues to present challenges to the hiring plan, and staffing is a key focus area for the project.

### **B. Construction**

While certain aspects of the work present challenges to the completion schedule, overall progress continues with approximately 4,300 contractor and subcontractor personnel on site daily. A majority of these jobs are held by South Carolina residents.

The primary critical paths for both Units 2 and 3 run through the reinforced concrete activities necessary to support placement of Shield Building Panels and the completion of Shield Building construction. For Unit 2, the secondary critical path runs through the completion of structures and setting of equipment within the Containment Vessel (CV). For Unit 3, the secondary critical path runs through completion of the civil, structural and other work necessary to complete the Annex Building. The fabrication of Shield Building components and structural submodules for Unit 3 Module CA01 is a potential critical path item for the project. Additional mitigation will be required in certain of these critical path areas to support the substantial completion dates described below.

#### **1. Unit 2 Inside-Containment Vessel (CV) Construction**

During the period, concrete Layers 6 and 7 East were successfully placed inside the Unit 2 CV. This allowed Structural Modules CA02 and CA03, Unit 2 Floor Module CH77, and the Unit 2 Reactor Vessel (RV) to be lifted and set in place

inside the Unit 2 CV. All main structural modules for Unit 2 are now completed and placed. The Unit 2 Hot and Cold Leg piping is undergoing final machining in preparation for installation and connection to the RV. Work continues on various internal structures within the Unit 2 CV.

## **2. Unit 2 Containment Vessel (CV)**

Fabrication of the Unit 2 CV Top Head is 85% complete. Installation of platforms and other attachments on the interior of Unit 2 CV Ring 2 continues in preparation for setting Ring 2 on top of Unit 2 CV Ring 1. Preparation of Unit 2 CV Ring 1 surfaces continues to support the setting of the Unit 2 CV Ring 2. Receipt of pre-fabricated platforms from the vendor Paxton & Vierling Steel Company has not met schedule expectations and is a focus area.

Acceptance rates based on the Radiographic Testing (RT) of welds on the Units 2 and 3 CV Rings and Top Head remain above 99%.

## **3. Unit 2 Shield Building Construction**

Unit 2 Shield Building Panel Course 5 is staged and ready to be placed. Courses 6 through 13 have been prefabricated and are awaiting staging and placement.

## **4. Unit 2 Annex Building**

Construction of the Annex Building continued with the placement of concrete walls, structural steel and supplemental steel.

## **5. Unit 2 Auxiliary Building**

Concrete was placed for multiple walls in the Unit 2 Auxiliary Building. During the period, piping modules R161 and R106, mechanical modules KB 22, 27, and 28, and multiple pre-fabricated floors were set.

## **6. Unit 2 Turbine Building**

The installation of structural steel within the Unit 2 Turbine Building was completed during the period as was the placement of elevated slabs within the building. The Unit 2 Deaerator and all remaining Unit 2 Feed Water Heaters were lifted and set in place. Multiple pipe system packages were installed, and supports are being welded in preparation for the Moisture Separator to be installed.

## **7. Unit 3 Nuclear Island (NI)**

Commodities were installed in the Unit 3 NI in preparation for placing Layer 3 concrete.

## **8. Unit 3 Containment Vessel (CV)**

Fabrication of the Unit 3 CV Top Head continues and is 65% complete. Welding of the Unit 3 CV Rings was completed in prior periods.

## **9. Unit 3 Auxiliary and Annex Building**

The remaining sub-assemblies comprising Unit 3 Sub-Assemblies CA 20-1 and CA20-2 were lifted and set in place in the Auxiliary Building completing the placement of Unit 3 CA20. Additional concrete was successfully placed in the area of the transition section between the Unit 3 Shield Building and the Auxiliary Building (Wedge). Concrete and form work for the Unit 3 Auxiliary and Annex Building wall and floors continues.

## **10. Unit 3 Turbine Building**

During the period, Structural Steel Modules CH 81 and 82 for the Unit 3 Turbine Building, were lifted and set in place on their foundations. The Unit 3 Upper and Lower Condensers were then lifted and set in place within the building.

## **11. Unit 3 Shield Building**

At the close of the period, rebar installation, form work and other preparations were nearing completion for the placement of Layer E1 and E2 concrete within the Unit 3 Nuclear Island. These concrete layers represent two of the final three layers of concrete that will form the foundation on which the Shield Building Panels will be set. Unit 3 Shield Building Panels are on site and have been prefabricated up to Course 6.

## **12. Cooling Towers**

All four Cooling Towers are now structurally complete. Mechanical and electrical work continues to complete them.

## **13. Unit 2 High-Side Switchyard**

Oil filling and outfitting of the Unit 2 High-Side Switchyard transformers continues.

## **14. Offsite Water System (OWS)**

Work on recoating the storage tanks of the OWS continues. The OWS is otherwise substantially complete.

## **15. Procurement**

Westinghouse and Fluor are revising procurement policies and issuing purchase orders to additional vendors to improve the timely delivery of specially fabricated commodities to the site. This is a process improvement identified in the FAA that Fluor began after the Amendment was signed.

### **C. Module and Shield Building Panel Fabrication and Assembly**

The on-site assembly of structural modules remains a potential critical path item for the project as does the quality and fabrication schedule of mechanical modules.

In addition to its other Quality Assurance/Quality Control (QA/QC) resources, SCE&G maintains an inspector on site at Newport News Industrial (NNI) and a shared inspector for the Vigor Industrial and Greenberry Industrial sites near Portland, Oregon. An inspector remains at Paxton & Vierling where platforms for the interior of the CV are being fabricated. During the period, SCE&G added a resident inspector at the Aecon facility outside of Toronto, Canada. Aecon is the primary supplier for the eight nuclear safety related ASME mechanical modules required by each Unit.

#### **1. Mechanical and Submodule Production**

Commercial issues between WEC and CB&I related to mechanical modules produced by CB&I-LC remain unresolved and are impacting mechanical module production schedule. During the period, WEC implemented contingency purchase orders for the mechanical modules CB&I-LC had been supplying. Other vendors now will be supplying these modules. WEC continues schedule mitigation planning related to these modules and issuing purchase orders to other vendors. Production of these modules, and other structural and mechanical modules, remains an important focus area for the project.

#### **2. Unit 2 Modules and Submodules**

All six major structural modules required to complete Unit 2 have been fabricated and installed.

#### **3. Unit 3 Modules and Submodules**

At the close of the period, the on-site fabrication of Unit 3 Module CA01 was nearing completion.

#### **4. Shield Building Panels**

One hundred twenty-seven (127) of the 167 Shield Building Panels for the Unit 2 Shield Building have been received on site from NNI. Seventy-three (73) of

the Unit 3 Shield Building panels are on site. NNI continues to meet quality and schedule expectations. NNI is actively implementing its mitigation plan to accelerate shield building panel fabrication.

## **5. Unit 2 and Unit 3 Air Inlet and Tension Rings**

During the period, NNI issued a schedule for fabricating the Unit 2 and Unit 3 Air Inlet and Tension Rings. This schedule meets construction need dates for these components.

## **6. Cives Embed Plates**

Cives is a supplier of embed plates and other steel components to the project. Follow-up by SCE&G and Westinghouse on issues from prior QA/QC audits continues. Preparation of a LAR related to embedment production issues continued. During the period Westinghouse established mitigations for issues with Cives and other suppliers to improve delivery of embed plates to the construction site.

## **7. Conclusion**

Senior management from both SCE&G and WEC continue to monitor the fabrication and delivery process related to submodules, mechanical modules and Shield Building Panels. In addition to its other QA/QC resources, SCE&G maintains an inspector on site at a number of suppliers. The fabrication of the mechanical modules and other submodules continues to be an important area of focus for the project.

### **D. Equipment and Fabrication**

No major equipment was delivered to the site this period. Approximately 95% of the valves and 75% of auxiliary equipment for the project have been delivered to the site.

#### **1. Steam Generators**

The welding of the second Reactor Coolant Pump (RCP) casing to Steam Generator 3A is ongoing at the Doosan facility in South Korea. The scheduled delivery date of the Steam Generator 3A supports construction need dates. All other Steam Generators are on site.

#### **2. Reactor Coolant Pumps (RCPs)**

Final assembly and testing is in process for all Unit 2 and Unit 3 RCP components. Two of four Unit 2 RCPs have completed testing. The current delivery schedule for these items supports the project's construction need dates.

### 3. **Passive Residual Heat Removal (PRHR) Heat Exchangers**

Supplemental restraint bar installation is complete on the Unit 2 PRHR Heat Exchanger, which is being prepared for shipment. Supplemental restraint bar installation continues on the Unit 3 PRHR Heat Exchanger. Delivery dates support the project's construction need dates.

### 4. **Other Mangiarotti Issues**

Root cause evaluations of Mangiarotti's quality issues with sub suppliers have been successfully concluded. All shipping holds and on-site equipment holds have been released.

### 5. **Squib Valves**

A change to the design of the flange shields for the 8 inch squib valves will be required to resolve installation interference identified in the Chinese AP1000 projects. This change will be made at the factory before the valves are shipped. The resulting delivery dates for these valves support construction need dates. Assembly is complete for all 14 inch and 8 inch squib valves for Unit 2 and assembly continues on the 14 inch and 8 inch squib valves for Unit 3.

### 6. **Information Technology**

**Handover and Turnover of Proprietary Information.** WEC has delivered draft turnover procedures to coordinate the handover and turnover of WEC proprietary information to SCE&G to support pre-operational testing and commercial operations of the Units. SCE&G has provided comments on the drafts and is awaiting a revised document from WEC.

**Configuration Management Information System (CMIS).** SCE&G has completed software coding for the system to electronically retrieve turnover packages provided by WEC. SCE&G also completed the configuration of the master equipment list and engineering documents for Units 2 and 3 in SCE&G's configuration management software. The interface between this configuration management software and the Work Management System (WMS) for the Units has been configured.

**Work Management System (WMS).** The WMS is on target to go live with modules to support Unit 2 pre-operational testing in the fourth quarter.

**Cyber Security.** WEC has delivered a project schedule and the first installment of data identifying Critical Digital Assets (CDAs) for the cyber security project. The cyber security monitoring system is in design.

## **E. Quality Systems**

### **1. Supplier Oversight**

SCE&G Quality representatives conducted quality assurance observations at the following supplier facilities:

- Curtis Wright—EMD—RCPs
- Nova Machine Products—Cable Trays
- Paxton & Vierling Steel—Structural Steel
- Aecon Industrial—Mechanical Modules
- Carolina Energy Solutions—RCP casings
- Wyman Gordan—Main Stream Piping
- CB&I Laurens—Pipe Spools

No significant issues were identified.

### **2. On Site Quality Surveillance Activity**

SCE&G personnel completed 31 surveillances of construction activities at Jenkinsville related to module installation, adequacy of work packages, traceability of materials, training and qualification, lifting and rigging, commercial grade dedication, non-destructive examination, hydrostatic testing, subcontractor activities, and trending. No significant issues were identified.

### **3. Quality Systems Audit Activity**

SCE&G personnel conducted an audit of the WECTEC and WEC Corrective Action Program. Six findings were issued as a result of the audit. SCE&G audit personnel considered the findings to collectively represent a Significant Condition Adverse to Quality. The contractor is currently in the process of responding to the identified findings.

An audit of the SCE&G Quality Systems department was conducted by a team of external peers. The audit concluded that New Nuclear Deployment (NND) Quality Systems is in compliance with standards and is effectively implementing its foundational documents, the Quality Assurance Program Description and the ASME Quality Assurance Program Plan. No significant conditions were identified.

## **F. Licensing and Permitting and Regulatory Proceedings**

### **1. NRC Inspections**

During the period, the NRC Resident Inspectors issued the Second Quarter 2016 Integrated Inspection Report. The report documented three Green Non-Cited Violations (NCVs): (1) 10 CFR 50, Appendix B, Criterion X, "Inspection," for welds signed off as satisfactory by QC that did not meet requirements; (2) 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for two procedures that did not fully capture program requirements; and (3) 10 CFR 50, Appendix B, Criterion III, "Design Control," for rebar welding not in conformance with code. In the Third Quarter 2016, the NRC conducted inspections related to Part 21 for Pipe Spools, Inspections, Tests, Analyses & Acceptance Criteria (ITAAC) 841 (Design Reliability Assurance Program), and the Corrective Action Program. The NRC identified one Green Licensee-Identified Violation (LIV) of 10 CFR 50, Appendix B, Criterion IV, "Procurement Document Control," for containment pipe supports with an incorrect coating material.

### **2. License Amendment Requests (LARs)**

The NRC has granted a total of 56 LARs, three of which were granted during the reporting period. Twenty-five LARs were pending at the close of the period. During the period, SCE&G filed twelve LARs with the NRC. For ease of reference, a report that tabulates all the LARs submitted by SCE&G to the NRC as of September 30, 2016, is attached as Appendix 5.

LAR 90 concerns floors that have passive heat removal structures in the form of fins. LAR 90 requests NRC approval for changes in the design to support constructability. One Preliminary Amendment Request (PAR) has been issued related to LAR 90, and a second was outstanding at the end of the period.

### **3. Inspections, Tests, Analyses & Acceptance Criteria (ITAAC)**

During this period, SCE&G submitted seven ITAAC Closure Notifications to the NRC. Of the 53 submitted ITAAC Closure Notifications, 49 have been verified complete and four are under review by the NRC. ITAAC submittal rates must increase significantly in 2017 to meet schedule requirements. SCE&G has raised concerns with WEC about timeliness and the level of engineering support being provided by WEC for this process. The ITAAC submittal rate is an area of focus for the project.



## **G. Engineering**

### **1. Engineering Completion Status**

As of September 30, 2016, the Units 2 and 3 engineering completion (including Nuclear Island (NI), Balance of Plant (BOP), Site Specific, and Instrumentation and Controls) was 94% complete. Delivery of design documents for construction continues to be a focus area for SCE&G.

## **H. Training**

### **1. Certification of the Plant Simulators as Nuclear Regulatory Commission (NRC) Approved Simulators (CASs)**

The NRC approved SCE&G's CAS request on August 1, 2016. Approval of the plant simulators as CASs allows them to be used to administer NRC operator exams. The CAS approval will sunset when the NRC grants permission to load fuel, at which time it is anticipated that the simulators will have been classified as Plant Referenced Simulators (PRSs).

The NRC also granted permission for operator candidates to use the CAS to complete significant control manipulations, which are required prior to administration of an NRC licensed operator exam.

### **2. Certification of the Plant Simulators as Plant Reference Simulators (PRSs)**

SCE&G continues to pursue NRC approval for the plant simulators as PRSs. This approval will allow the plant simulators to be used to support training and licensing activities, including candidates conducting significant control manipulations after NRC permission for initial fuel load is granted.

Resolution of issues identified in the Integrated System Validation (ISV) testing for the simulators and associated systems is projected for second quarter of 2018, which supports the fuel load date for Unit 2.

### **3. Initial Licensed Operator (ILO) Training**

During the period, the NRC communicated to SCE&G that nine operator candidates, who previously passed an NRC written examination in May 2015, would be allowed to complete the examination process without an excusal from the requirement that the written exam not be separated from the simulator exam by more than 30 days.

In September, 20 licensed operator candidates completed their NRC examinations, including five of the nine candidates who had passed the May 2015 written exam. This consists of a written exam, a simulator “operating” exam and job performance measure (JPM) demonstrations. The other four candidates who took the written exam in May 2015 will take their operating exams and JPMs in January 2017. Preliminary scoring indicates that all fifteen new operator candidates tested in September were successful on the written portion of the exam.

#### **4. Maintenance and Technical (M&T) Staff Training**

During the period, additional cohorts of M&T trainees completed the initial training sessions for their Tier 2 discipline-specific training. Development of maintenance training material remains on track to support the current Tier 3 (AP1000-specific training) schedule for maintenance and technical staff.

The Institute of Nuclear Power Operations (INPO) has scheduled an M&T Training program Accreditation Team Visit (ATV) during the fourth quarter of 2016 to support SCE&G’s request for initial accreditation of M&T Training Programs. SCE&G is scheduled to present the M&T Training Programs to the National Nuclear Accrediting Board (NNAB) for approval in the second quarter of 2017.

#### **I. Operational Readiness (OR)**

SCE&G and WEC continue to refine SCE&G’s OR schedule and integrate it into the comprehensive Integrated Project Schedule maintained by WEC. The current focus areas include staff training; the issuing of programs and procedures needed for system turnover and plant operations; and alignment with WEC on items necessary to support design authority transfer.

##### **1. Mission Critical Hiring**

SCE&G has hired 58 of the 63 positions identified as mission critical for 2016. Eighty-nine (89) of 141 positions have been hired toward the overall 2016 hiring goal. The number of NND positions filled to date is 613.

##### **2. Initial Testing Program (ITP) Components**

During the period, WEC completed a draft Division of Responsibility (DOR) document to define clear lines of responsibility for ITP execution and support. The DOR is under review by SCE&G.

#### **J. Change Control/Owners’ Cost Forecast**

One new notice of change was received during the period related to revisions to the South Carolina Building Codes. SCE&G informed WEC that this change predated October

27, 2015, and so by the terms of the Amendment, was precluded from being the basis for a change order.

### **1. Dispute Review Board (DRB)**

By terms of the Amendment, SCE&G and WEC were to agree upon a construction milestone payment schedule within five months of the execution of the Amendment or submit the issue to the DRB. SCE&G and WEC agreed to extend their discussions through July 2016 but were unable to reach agreement during that time. On August 1, 2016, SCE&G referred the matter to the DRB. The dispute relates only to the timing of payments, with WEC asking for payments pursuant to a schedule which is more front loaded than the Owners believe is appropriate. At the close of the period, the DRB issued an order directing the parties to continue their consultations using a methodology for assigning payment amounts to construction milestones based on earned value. Additionally, the DRB ordered SCE&G to make two additional transition payments in the months of October and November. The Order states that the DRB will make its final determination on or before November 30, 2016.

### **2. Corrective Action Program Interface (CAP-I) Change Orders**

During the period, SCE&G executed a change order for the 2016 CAP-I scope of work in the amount of \$272,928.<sup>1</sup>

### **3. Probable Maximum Precipitation (PMP) Analysis**

During the period, a change order was executed in the amount of \$220,721 for SCE&G's share of 50% cost of the PMP Analysis. This study models the response of the site drainage system to high-rainfall events and fulfills independent regulatory requirements held by both WEC and SCE&G.

### **4. Training Staff Augmentation**

During the period, SCE&G received a draft change order from WEC for the costs of WEC personnel to augment training resources. The amount of the change order is \$7.1 million. This change order was executed shortly after the close of the period.

### **5. Service Building Third Floor**

During the period, SCE&G de-scoped WEC and awarded the Service Building construction contract to a local construction company that has performed similar work on site previously. The work is being conducted at a fixed price of \$10.48 million and includes a third floor for the building. SCE&G and WEC are

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<sup>1</sup> All of the values in this section regarding change orders are reported in current dollars.

developing a credit change order for the costs associated with the first and second floors of the Service Building, which had been included in the EPC Contract cost.

#### **6. Primavera Access (Extension of Change Order No. 10)**

During the period, SCE&G executed a change order to extend the licenses for the Primavera Software used to access Westinghouse's construction schedule data. The extension brings the licenses into line with the new Guaranteed Substantial Completion Dates (GSCDs) for the Units. The cost of the extension is \$44,642.

#### **7. Escrow – Software & Documentation**

During the period, SCE&G received a draft change order of \$3.4 million for compiling and escrowing the source code for certain software, design data and facility documentation that would be required for completing construction of the Units independently of Westinghouse. The cost and scope of this change order is currently under review.

#### **8. Classroom Simulator**

SCE&G is reviewing a draft change order from WEC for the software necessary to implement a classroom simulator system to assist in training AP1000 licensed operators. With an optional pre-paid maintenance provision, the cost is approximately \$453,418.

#### **9. Plant Security Systems (SES) Integration**

During the period, SCE&G received a draft change order to integrate the SESs for Units 2 and 3. The proposed cost in the change order was \$6.3 million. Scope issues remain in discussion.

### **K. Transmission**

#### **1. The VCS2-St. George 230 kV Line No. 1 and the VCS2-St. George 230 kV Line No. 2**

Construction activities continued on the VCS2-St. George 230 kV Lines No. 1 and No. 2 segment between Gaston and Orangeburg. These activities included installation of construction access and erosion control measures, spotting and framing of poles, removal of the existing lines and installation of pole foundations, poles and conductors. Construction activities also began between the Saluda rapids and Dunbar Road segment of the project. These activities included installation of construction access and erosion control measures.

## **2. Wateree-St. George-Williams 230 kV Line**

During the period, construction was completed on the first approximately two-mile section of the project to rebuild the St. George to Summerville segment of the Wateree-St. George-Williams 230 kV Line. Construction preparation has begun on a second 13 mile section including installation of erosion control measures and construction access and the spotting and framing of poles and vibratory caissons.

## **3. Upgrades to the Unit 1 Switchyard**

The Unit 1 Switchyard is currently interconnected to the transmission grid directly and through the Unit 2 and 3 Switchyard. SCE&G has determined that for the Unit 1 Switchyard to function reliably in this configuration, modifications will be necessary regarding fault current in the switchyard. The fault current and modification options are currently being studied.

### **III. Anticipated Construction Schedules**

Until revised by the Commission, the milestone schedule approved in Order No. 2015-661 continues to be the operative milestone dates for reporting on the project. By the close of this period, 113 of the 146 milestones for reporting purposes are complete. The thirty-three remaining milestones have been delayed fifteen months or less compared to the schedule for the project as approved in Order No. 2015-661. None are outside of approved schedule contingencies.

**Appendix 1** to this quarterly report lists and updates each of the specific milestones constituting the anticipated construction schedules for the Units pursuant to S.C. Code Ann. § 58-33-270(B)(1) and Order No. 2015-661.

### **IV. Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B) (6) (the Inflation Indices)**

The Capital Costs section of this report (Section IV.A) provides an update of the cumulative capital costs incurred and forecasted to be incurred in completing the project. These costs are compared to the cumulative capital cost targets approved by the Commission in Order No. 2015-661. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. There has not been any use by the Company of the capital cost timing contingencies that were approved by the Commission in Order No. 2009-104(A). The Inflation Indices section (Section IV.B) of this report provides updated information on inflation indices and the changes in them.

## A. Capital Costs

**Appendix 2** shows the Cumulative Project Cash Flow target as approved in Order No. 2015-661 and as updated for escalation and other Commission-approved adjustments under the heading **“Per Order 2015-661 Adjusted.”**

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the Company’s current forecast of cost and construction schedules under the heading **“Actual through September 2016 plus Projected.”**

As shown on **Appendix 2**, the projected expenditure for the project for the 12 months ending December 31, 2016 is approximately \$901 million. As shown on **Appendix 2**, line 39, the cumulative amount projected to be spent on the project as of December 31, 2016 is approximately \$4.380 billion. As shown on **Appendix 2**, line 18, the Cumulative Project Cash Flow target approved by the Commission for year-end 2016 adjusted for current escalation is approximately \$4.742 billion. As a result, the cumulative cash flow projected at year-end 2016 is approximately \$362 million less than the target.

For comparison purposes, **Appendix 3** sets out the cash flow schedule for the project as it was approved in Order No. 2015-661. **Appendix 3** does not include any adjustments to the cash flow schedule for changes in inflation indices or adjustments in capital cost schedules made by the Company. The AFUDC forecast presented in **Appendix 3** is the AFUDC forecast that was current at the time of Order No. 2015-661.

## B. Inflation Indices

**Appendix 4** shows the updated inflation indices approved in Order No. 2009-104(A). Included is a history of the annual Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index for the past ten years.

## V. Updated Schedule of Anticipated Capital Costs

The updated schedule of anticipated capital costs for Units 2 and 3 is reflected in **Appendix 2**.

## VI. Conclusion

Under the Amendment, the GSCDs for Units 2 and 3 are August 31, 2019 and 2020 respectively. The total project capital cost is now estimated at approximately \$7.7 billion including escalation and allowance for funds used during construction (SCE&G’s portion in future dollars).

The Company maintains a staff that monitors the work of its contractors and continues to closely monitor areas of concern related to the cost and schedule for the

project. SCE&G continues to work diligently to verify the project is safely completed and that all costs are reasonable. The Company will continue to update the Commission and the ORS of progress and concerns as the project proceeds.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| ACA                     | Affordable Care Act.  |
| AECON                   | AECON Industrial- a supplier of mechanical modules for the project.   |
| AFUDC                   | Allowance for Funds Used During Construction.   |
| Amendment               | The October 2016 Amendment to the EPC Contract.   |
| AP1000                  | The WEC designed Advanced Pressurized water nuclear reactor of approximately 1000 megawatts generating capacity.                                  |
| APOG                    | A group of utilities who have submitted applications for AP1000 COLs.   |
| ATV                     | Accreditation Team Visit- performed by the INPO.  |
| BLRA                    | The Base Load Review Act, S.C. Code Ann. § 58-33-210 et seq. (Supp. 2009).  |
| BOP                     | Balance of Plant –areas outside of the nuclear island not classified as nuclear safety related.   |
| CA                      | The designation for specific pre-fabricated structural modules that form part of the reactor building or auxiliary building, such as Module CA20. |
| CAP                     | Corrective Action Program.  |
| CAP-I                   | Corrective Action Program Interface.  |
| CAR                     | A Corrective Action Report related to design, engineering or construction of the Units, or related processes, that must be corrected.             |
| CAS                     | Commission (NRC) Approved Simulator.  |
| CB&I                    | Chicago Bridge & Iron, a former member of the Consortium.   |



**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| CB&I-LC                 | CB&I Lake Charles – the module fabrication unit located in Lake Charles, Louisiana.   |
| CB&I Services           | A subsidiary of CB&I that is fabricating the containment vessels on site under contract with Westinghouse.  |
| CDA                     | Critical Digital Assets –as identified for cyber security purposes.   |
| CES                     | Carolina Energy Solutions, a subcontractor located in Rock Hill, South Carolina.  |
| CGD                     | Commercial Grade Dedication.  |
| CIP                     | Critical Infrastructure Protection.   |
| CMIS                    | Configuration Management Information System.  |
| CMMS                    | Computerized Maintenance Management System.   |
| COLs                    | Combined Operating Licenses for construction and operation of a nuclear unit issued by the NRC.   |
| COLA                    | A Combined Operating License Application.   |
| Commission              | The Public Service Commission of South Carolina.  |
| Consortium              | The joint venture between WEC and Stone & Webster to construct the Units under the terms of the EPC Contract. Stone & Webster is now a subsidiary of WEC.   |
| CR                      | A Condition Report communicating and memorializing concerns with the design, engineering or construction of the Units, or related processes, which in some cases can become the basis for a Corrective Action Report. |
| CV                      | The Containment Vessel which provides containment for the reactor vessel and associated equipment.  |

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference  |
|-------------------------|--|
| CVBH                    | The Containment Vessel Bottom Head that forms the bottom of the Containment Vessel.  |
| CWIP                    | Construction Work in Progress.   |
| CWP                     | Circulating Water Pipe.  |
| CWS                     | The Circulating Water System –the system that will transport waste heat from the turbines to the cooling towers.   |
| Cyber Security          | Technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access.                           |
| DCD                     | Design Control Document which is approved by the Nuclear Regulatory Commission and sets forth the approved design of a nuclear reactor.                                |
| Departures              | Departures are minor deviations from the approved Design Control Document included in the licensing basis for the Units that do not rise to the level requiring a LAR. |
| DOR                     | Division of Responsibility.  |
| DRB                     | Dispute Review Board.  |
| ECoE                    | WEC's Engineering Center of Excellence.  |
| EMD                     | Electro-Mechanical Division of Curtiss-Wright Corp., the sub-contractor for the Reactor Coolant Pumps.   |
| EPA                     | The United States Environmental Protection Agency.   |
| EPC Contract            | The Engineering, Procurement and Construction Agreement for construction of the Units as amended from time to time.  |
| ER                      | Equipment Reliability.   |

## **ATTACHMENT 1**

### **GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| ERB                     | The Emergency Response Building which provides office space and housing for the emergency response personnel and equipment for all three units. |
| Exit Debriefing         | A meeting held between the NRC and the licensee at the conclusion of an NRC inspection to discuss the results of the inspection.                |
| FAA                     | Functional Area Assessment, a work flow review to improve efficiency.   |
| FAS                     | First Article Survey.   |
| FERC                    | The Federal Energy Regulatory Commission.   |
| Fixed/Firm              | Prices under the EPC Contract which are either fixed or are firm but subject to defined escalation rates.                                       |
| Fluor                   | The Fluor Corporation   |
| GDP                     | Gross Domestic Product.   |
| HFE/ISV                 | Human Factors Engineering/Integrated Systems Validation –part of the development of a training simulator for the Units.                         |
| HL or Hot Leg           | That part of the Reactor Cooling Loop that transports steam to the steam generators.  |
| HLD                     | Heavy Lift Derrick – the derrick that was erected on site to move large modules and equipment.  |
| IBF                     | Subcontractor of Tioga that manufactures the Reactor Coolant Loop (RCL) piping.   |
| I&C                     | Instrumentation and Control.  |
| ICN                     | ITAAC Closure Notification – the letter from the licensee to notify the NRC that an ITAAC is complete in accordance with 10 CFR 52.99(c)(1).    |
| ICP                     | Integrated Construction Plan.   |

## **ATTACHMENT 1**

### **GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| IFC                     | Issued for Construction – engineering drawings that include information necessary for construction of specific structures, systems and components.  |
| ILO                     | Initial Licensed Operator.  |
| INPO                    | Institute of Nuclear Power Operations.  |
| IPS                     | Integrated Project Schedule for licensing and construction of the Units.  |
| ISV                     | Integrated Systems Validation.  |
| ITAAC                   | Inspections, Tests, Analyses, and Acceptance Criteria which are the inspections, tests, analyses and acceptance criteria that the NRC has determined to be necessary and sufficient to demonstrate that a nuclear unit has been constructed and will operate in conformity with the COLs, the Atomic Energy Act of 1954, as amended, and the NRC's regulations. |
| ITP                     | Initial Testing Program.  |
| LAR                     | License Amendment Request – A formal request made by VCSNS to amend the combined operating license, its appendices, or its associated bases.  |
| LNTP                    | Limited Notice to Proceed authorizing a vendor to commence specific work.   |
| LSA                     | Limited Scope Audit.  |
| LSS                     | Limited Scope Simulator –a training simulator with limited functionality that can be used for the initial stages of operator training.  |
| M&T                     | Maintenance and Technical.  |
| MAB                     | Module Assembly Building - a building on site where large modules will be constructed and equipment will be prepared for installation in a space that is protected from the elements.   |

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| Mangiarotti             | Mangiarotti Nuclear, S.p.A.   |
| MEL                     | Master Equipment List – a list that identifies the attributes for assets which are permanent plant equipment used in the plant. |
| MTS                     | Maintenance Training Skid.  |
| NCV                     | Non-Cited Violations.   |
| NDE                     | Non-Destructive Examination.  |
| NEI                     | Nuclear Energy Institute.   |
| NI                      | Nuclear Island, comprising the steel containment vessel, the reactor building, and the auxiliary building.                      |
| NLC                     | Nuclear Learning Center - a training facility operated by SCE&G at the Jenkinsville site.                                       |
| NLO                     | Non-Licensed Operator.  |
| NNAB                    | National Nuclear Accrediting Board.   |
| NND                     | The New Nuclear Deployment Team within SCE&G.   |
| NNI                     | Newport News Industrial - a module fabrication subcontractor to WEC/CB&I.   |
| NON                     | Notice of Non-conformance.  |
| NPDES                   | National Pollutant Discharge Elimination System.  |
| NRC                     | The United States Nuclear Regulatory Commission.  |

## **ATTACHMENT 1**

### **GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference  |
|-------------------------|--|
| NUPIC                   | Nuclear Procurement Issues Committee--An international association of nuclear utilities that conducts independent audits of companies involved in the nuclear supply chain.                        |
| ORS                     | South Carolina Office of Regulatory Staff.   |
| OWS                     | Offsite Water System – the system that withdraws water from Monticello Reservoir and provides potable and filtered water for the Units.  |
| PAR                     | Preliminary Amendment Request - A formal request made by VCSNS which allows VCSNS to proceed at its own risk with work consistent with an amendment request contained in an LAR prior to approval. |
| PDC                     | Power Distribution Center - prefabricated, modular enclosures housing electrical equipment such as switchgear, motor control center equipment and other auxiliary equipment.                       |
| Pike                    | Pike Energy Solutions, a contractor for transmission and switchyard related work.  |
| PM                      | Preventative Maintenance.  |
| PMO                     | Project Management Organization.   |
| PMP                     | Probable Maximum Precipitation.  |
| PO                      | Purchase Order.  |
| PRA                     | Probabilistic Risk Assessment.   |
| PRHR                    | The Passive Residual Heat Removal Heat Exchanger unit –a heat exchanger unit that is part of the passive safety system which provides cooling to the AP1000 reactor during emergency situations.   |
| PRS                     | Plant Reference Simulator – a training simulator with full functionality that can be used in all stages of operator training.  |

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference  |
|-------------------------|--|
| PWS                     | The Potable Water System - which provides potable water to the site.   |
| QA                      | Quality Assurance – The planned and systematic activities implemented in a quality system so that the quality requirements for a product or service will be fulfilled.     |
| QAP                     | Quality Assurance Program.   |
| QA/QC                   | Quality Assurance/Quality Control.   |
| QC                      | Quality Control – The observation techniques and activities used to fulfill requirements for quality.  |
| QMS                     | Quality Management System.   |
| QS                      | Quality Systems.   |
| RAI                     | Requests for Additional Information issued by the NRC staff to license applicants.   |
| RCA                     | Root Cause Analysis – identification and evaluation of the reason for non-conformance, an undesirable condition, or a problem which (when solved) restores the status quo. |
| RC/SC                   | Reinforced Concrete to Steel Component.  |
| RCL                     | The Reactor Coolant Loop – the piping and related equipment that transports heat from the reactor to the steam generator.  |
| RCP                     | The Reactor Coolant Pump which forms part of the Reactor Coolant System.   |
| RCS                     | The Reactor Coolant System – the complete system for transferring and transporting heat from the reactor to the steam generator.   |
| RFI                     | Requests for Information issued by the NRC staff to licensees.   |
| ROE                     | Return on Equity.  |

## **ATTACHMENT 1**

### **GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference  |
|-------------------------|--|
| ROW                     | Right-of-way.  |
| RT                      | Radiographic Testing – a nondestructive testing method of inspecting materials for hidden flaws by using the ability of short wavelength electromagnetic radiation (high energy photons) to penetrate various materials. |
| RV                      | Reactor Vessel.  |
| RWS                     | Raw Water System – the system for withdrawing and transporting raw water from the Monticello Reservoir.  |
| SAT                     | Site Acceptance Testing.   |
| SCDHEC                  | The South Carolina Department of Health and Environmental Control.   |
| SCDNR                   | The South Carolina Department of Natural Resources.  |
| SCE&G or The Company    | South Carolina Electric & Gas Company.   |
| SDS                     | Simulator Development System.  |
| SER                     | Safety Evaluation Report - a report generated by the NRC.  |
| SES                     | Plant Security Systems.  |
| SMCI                    | MetalTek-SMCI Division.  |
| SNC                     | Southern Nuclear Company – a subsidiary of Southern Company and licensed operator of the Vogtle Nuclear Units and two other nuclear plants.  |
| SPX                     | SPX-Copes Vulcan--the supplier of Squib Valves for the project.  |
| SRO                     | Senior Reactor Operator.   |
| SROC                    | Senior Reactor Operator Certification.   |



**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference  |
|-------------------------|--|
| Target                  | Costs under the EPC Contract where targets have been established but where SCE&G pays actual costs as incurred.                                    |
| TEi                     | Thermal Engineering International – a subsidiary of Babcock Power which manufactures moisture separator reheaters and other power plant equipment. |
| TSU                     | Technical Specification Upgrade.   |
| Units                   | V. C. Summer Nuclear Station Units 2 & 3.  |
| Update Docket           | A proceeding under the BLRA seeking Commission approval of updated cost and construction schedules for the Units.                                  |
| UPS                     | Uninterruptible Power Supply.  |
| URI                     | Unresolved Items – A term used by the NRC during inspections for items that require further action.  |
| USACOE                  | The United States Army Corps of Engineers.   |
| VCSNS or VCSN           | V. C. Summer Nuclear Station.  |
| WEC                     | Westinghouse Electric Company, LLC.  |
| WECTEC                  | A subsidiary of WEC principally established to house engineering and supervisory personnel transitioning from CB&I.                                |
| WMS                     | Work Management System.  |
| WRS                     | Waste Drain System.  |
| WTP                     | The off-site Water Treatment Plant which will take water from Lake Monticello and treat it to potable water standards.                             |

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

| Acronym or Defined Term | Reference   |
|-------------------------|---|
| WWS                     | The Waste Water System – the system for collection, treatment and disposal of domestic waste water generated on site. |

## **APPENDIX 1**

### **V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

### **Quarter Ending September 30, 2016**




**Appendix 1** lists and updates each of the milestones which the Commission adopted as the Approved Construction Schedule for the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(1) in Order No. 2015-661. **Appendix 1** provides columns with the following information:

1. Milestone tracking ID number.
2. The description of the milestone as updated in Order No. 2015-661.
3. The BLRA milestone date as approved by the Commission in Order No. 2015-661.
4. The current milestone date.
5. For each completed milestone, the date by which it was completed. For milestones completed prior to the current reporting quarter, the milestone entry is shaded in gray. For milestones completed during the current reporting quarter, the milestone entry is shaded in green.
6. Information showing the number of months, if any, by which a milestone has been shifted. For milestones with planned completion dates that vary in days instead of months, the milestone entry is shaded in yellow.
7. Information as to whether any milestone has been shifted outside of the +18/-24 Month Contingency approved by the Commission.
8. Notes.

On the final page of the document, there is a chart summarizing milestone completion and movement comparing the current milestone date to the milestone date approved in Order No. 2015-661. This movement is shown for only the milestones that have not been completed.




**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description  | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|---|--------------------|--|------------------------|---|-------------------------------------|-------|
| 1           | Approve Engineering Procurement and Construction Agreement  | Complete           |  | 5/23/2008              |   | No                                  |       |
| 2           | Issue POs to nuclear component fabricators for Units 2 & 3 Containment Vessels                          | Complete           |  | 12/3/2008              |   | No                                  |       |
| 3           | Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2 | Complete           |  | 8/18/2008              |   | No                                  |       |
| 4           | Contractor Issue PO to Accumulator Tank Fabricator - Unit 2   | Complete           |  | 7/31/2008              |   | No                                  |       |
| 5           | Contractor Issue PO to Core Makeup Tank Fabricator - Units 2 & 3  | Complete           |  | 9/30/2008              |   | No                                  |       |
| 6           | Contractor Issue PO to Squib Valve Fabricator - Units 2 & 3   | Complete           |  | 3/31/2009              |   | No                                  |       |
| 7           | Contractor Issue PO to Steam Generator Fabricator - Units 2 & 3   | Complete           |  | 5/29/2008              |   | No                                  |       |
| 8           | Contractor Issue Long Lead Material PO to Reactor Coolant Pump Fabricator - Units 2 & 3                 | Complete           |  | 6/30/2008              |   | No                                  |       |
| 9           | Contractor Issue PO to Pressurizer Fabricator - Units 2 & 3   | Complete           |  | 8/18/2008              |   | No                                  |       |
| 10          | Contractor Issue PO to Reactor Coolant Loop Pipe Fabricator - First Payment - Units 2 & 3               | Complete           |  | 6/20/2008              |   | No                                  |       |
| 11          | Reactor Vessel Internals - Issue Long Lead Material PO to Fabricator - Units 2 & 3                      | Complete           |  | 11/21/2008             |   | No                                  |       |
| 12          | Contractor Issue Long Lead Material PO to Reactor Vessel Fabricator - Units 2 & 3                       | Complete           |  | 5/29/2008              |   | No                                  |       |
| 13          | Contractor Issue PO to Integrated Head Package Fabricator - Units 2 & 3                                 | Complete           |  | 7/31/2009              |   | No                                  |       |
| 14          | Control Rod Drive Mechanism Issue PO for Long Lead Material to Fabricator - Units 2 & 3 - first payment | Complete           |  | 6/21/2008              |   | No                                  |       |
| 15          | Issue POs to nuclear component fabricators for Nuclear Island structural CA20 Modules                   | Complete           |  | 8/28/2009              |   | No                                  |       |
| 16          | Start Site Specific and balance of plant detailed design  | Complete           |  | 9/11/2007              |   | No                                  |       |
| 17          | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3                  | Complete           |  | 10/31/2008             |   | No                                  |       |
| 18          | Steam Generator - Issue Final PO to Fabricator for Units 2 & 3  | Complete           |  | 6/30/2008              |   | No                                  |       |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description   | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|-------|
| 19          | Reactor Vessel Internals - Contractor Issue PO for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2&3 | Complete           |  | 1/29/2010              |   | No                                  |       |
| 20          | Contractor Issue Final PO to Reactor Vessel Fabricator - Units 2&3   | Complete           |  | 9/30/2008              |   | No                                  |       |
| 21          | Variable Frequency Drive Fabricator Issue Transformer PO - Units 2&3   | Complete           |  | 4/30/2009              |   | No                                  |       |
| 22          | Start clearing, grubbing and grading   | Complete           |  | 1/26/2009              |   | No                                  |       |
| 23          | Core Makeup Tank Fabricator Issue Long Lead Material PO - Units 2 & 3  | Complete           |  | 10/31/2008             |   | No                                  |       |
| 24          | Accumulator Tank Fabricator Issue Long Lead Material PO - Units 2&3  | Complete           |  | 10/31/2008             |   | No                                  |       |
| 25          | Pressurizer Fabricator Issue Long Lead Material PO - Units 2 & 3   | Complete           |  | 10/31/2008             |   | No                                  |       |
| 26          | Reactor Coolant Loop Pipe - Contractor Issue PO to Fabricator - Second Payment - Units 2 & 3                                     | Complete           |  | 4/30/2009              |   | No                                  |       |
| 27          | Integrated Head Package - Issue PO to Fabricator - Units 2 and 3 - second payment  | Complete           |  | 7/31/2009              |   | No                                  |       |
| 28          | Control Rod Drive Mechanisms - Contractor Issue PO for Long Lead Material to Fabricator - Units 2 & 3                            | Complete           |  | 6/30/2008              |   | No                                  |       |
| 29          | Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3                    | Complete           |  | 10/31/2008             |   | No                                  |       |
| 30          | Start Parr Road intersection work  | Complete           |  | 2/13/2009              |   | No                                  |       |
| 31          | Reactor Coolant Pump - Issue Final PO to Fabricator - Units 2 & 3  | Complete           |  | 6/30/2008              |   | No                                  |       |
| 32          | Integrated Heat Packages Fabricator Issue Long Lead Material PO - Units 2 & 3  | Complete           |  | 10/1/2009              |   | No                                  |       |
| 33          | Design Finalization Payment 3  | Complete           |  | 1/30/2009              |   | No                                  |       |
| 34          | Start site development   | Complete           |  | 6/23/2008              |   | No                                  |       |
| 35          | Contractor Issue PO to Turbine Generator Fabricator - Units 2 & 3  | Complete           |  | 2/19/2009              |   | No                                  |       |
| 36          | Contractor Issue PO to Main Transformers Fabricator - Units 2 & 3  | Complete           |  | 9/25/2009              |   | No                                  |       |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description   | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|-------|
| 37          | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3   | Complete           |  | 12/30/2010             |   | No                                  |       |
| 38          | Design Finalization Payment 4  | Complete           |  | 4/30/2009              |   | No                                  |       |
| 39          | Turbine Generator Fabricator Issue PO for Condenser Material - Unit 2  | Complete           |  | 8/28/2009              |   | No                                  |       |
| 40          | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3   | Complete           |  | 4/30/2009              |   | No                                  |       |
| 41          | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3  | Complete           |  | 5/27/2010              |   | No                                  |       |
| 42          | Design Finalization Payment 5  | Complete           |  | 7/31/2009              |   | No                                  |       |
| 43          | Start erection of construction buildings, to include craft facilities for personnel, tools, equipment; first aid facilities; field offices for site management and support personnel; temporary warehouses; and construction hiring office | Complete           |  | 12/18/2009             |   | No                                  |       |
| 44          | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2  | Complete           |  | 8/28/2009              |   | No                                  |       |
| 45          | Design Finalization Payment 6  | Complete           |  | 10/7/2009              |   | No                                  |       |
| 46          | Instrumentation and Control Simulator - Contractor Issue PO to Subcontractor for Radiation Monitor System - Units 2 & 3  | Complete           |  | 12/17/2009             |   | No                                  |       |
| 47          | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2   | Complete           |  | 7/29/2011              |   | No                                  |       |
| 48          | Turbine Generator Fabricator Issue PO for Moisture Separator Reheater/Feedwater Heater Material - Unit 2   | Complete           |  | 4/30/2010              |   | No                                  |       |
| 49          | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2   | Complete           |  | 2/18/2010              |   | No                                  |       |
| 50          | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2   | Complete           |  | 8/28/2012              |   | No                                  |       |
| 51          | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2  | Complete           |  | 6/30/2009              |   | No                                  |       |
| 52          | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2   | Complete           |  | 12/23/2010             |   | No                                  |       |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description  | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|---|--------------------|--|------------------------|---|-------------------------------------|-------|
| 53          | Start excavation and foundation work for the standard plant for Unit 2  | Complete           |  | 3/15/2010              |   | No                                  |       |
| 54          | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2                        | Complete           |  | 4/30/2010              |   | No                                  |       |
| 55          | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2                  | Complete           |  | 12/30/2010             |   | No                                  |       |
| 56          | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2  | Complete           |  | 5/17/2010              |   | No                                  |       |
| 57          | Complete preparations for receiving the first module on site for Unit 2   | Complete           |  | 1/22/2010              |   | No                                  |       |
| 58          | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2                  | Complete           |  | 4/21/2010              |   | No                                  |       |
| 59          | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2                                 | Complete           |  | 11/16/2010             |   | No                                  |       |
| 60          | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | Complete           |  | 3/20/2012              |   | No                                  |       |
| 61          | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2                                   | Complete           |  | 11/26/2012             |   | No                                  |       |
| 62          | Polar Crane Fabricator Issue PO for Main Hoist Drum and Wire Rope Units 2 & 3   | Complete           |  | 2/1/2011               |   | No                                  |       |
| 63          | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3                                       | Complete           |  | 6/14/2011              |   | No                                  |       |
| 64          | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2  | Complete           |  | 3/26/2012              |   | No                                  |       |
| 65          | Start placement of mud mat for Unit 2   | Complete           |  | 7/20/2012              |   | No                                  |       |
| 66          | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2                                   | Complete           |  | 9/28/2010              |   | No                                  |       |
| 67          | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2                         | Complete           |  | 10/28/2011             |   | No                                  |       |

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**Appendix 1**  
**VC Summer Units 2 and 3**




| Tracking ID | Order No. 2015-661 Description  | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|---|--------------------|--|------------------------|---|-------------------------------------|-------|
| 68          | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3                               | Complete           |  | 6/28/2012              |   | No                                  |       |
| 69          | Begin Unit 2 first nuclear concrete placement   | Complete           |  | 3/9/2013               |   | No                                  |       |
| 70          | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2                                   | Complete           |  | 12/1/2011              |   | No                                  |       |
| 71          | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2   | Complete           |  | 7/29/2011              |   | No                                  |       |
| 72          | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2         | Complete           |  | 1/27/2012              |   | No                                  |       |
| 73          | Reactor Coolant Loop Pipe-Shipment of Equipment to Site - Unit 2  | Complete           |  | 12/19/2013             |   | No                                  |       |
| 74          | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | Complete           |  | 7/16/2012              |   | No                                  |       |
| 75          | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2                  | Complete           |  | 12/22/2011             |   | No                                  |       |
| 76          | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2         | Complete           |  | 5/4/2012               |   | No                                  |       |
| 77          | Design Finalization Payment 14  | Complete           |  | 10/31/2011             |   | No                                  |       |
| 78          | Set module CA04 for Unit 2  | Complete           |  | 5/3/2014               |   | No                                  |       |
| 79          | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2   | Complete           |  | 5/24/2011              |   | No                                  |       |
| 80          | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2             | Complete           |  | 5/29/2012              |   | No                                  |       |
| 81          | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2                                     | Complete           |  | 10/23/2012             |   | No                                  |       |
| 82          | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3  | Complete           |  | 8/26/2013              |   | No                                  |       |
| 83          | Set Containment Vessel ring #1 for Unit 2   | Complete           |  | 6/3/2014               |   | No                                  |       |
| 84          | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2  | Complete           |  | 7/6/2013               |   | No                                  |       |
| 85          | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3                                   | Complete           |  | 7/18/2013              |   | No                                  |       |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description   | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes  |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|--|
| 86          | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3                             | Complete           |  | 3/29/2012              |   | No                                  |  |
| 87          | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3                           | Complete           |  | 11/9/2011              |   | No                                  |  |
| 88          | Set Nuclear Island structural module CA03 for Unit 2   | Complete           |  | 7/22/2016              |   | No                                  |  |
| 89          | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2     | Complete           |  | 5/10/2012              |   | No                                  |  |
| 90          | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3                    | Complete           |  | 9/16/2013              |   | No                                  |  |
| 91          | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2                           | Complete           |  | 3/6/2013               |   | No                                  |  |
| 92          | Start containment large bore pipe supports for Unit 2  | Complete           |  | 11/13/2014             |   | No                                  |  |
| 93          | Integrated Head Package - Shipment of Equipment to Site - Unit 2   | Complete           |  | 5/9/2014               |   | No                                  |  |
| 94          | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2                    | Complete           |  | 12/17/2013             |   | No                                  |  |
| 95          | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3    | Complete           |  | 2/7/2014               |   | No                                  |  |
| 96          | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | Complete           |  | 1/14/2013              |   | No                                  |  |
| 97          | Start concrete fill of Nuclear Island structural modules CA01 and CA02 for Unit 2                                    | 7/18/2016          | 2/13/2017                                |                        | +7 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 98          | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2                       | Complete           |  | 4/25/2014              |   | No                                  |  |
| 99          | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2     | Complete           |  | 1/8/2015               |   | No                                  |  |
| 100         | Deliver Reactor Vessel Internals to Port of Export - Unit 2  | Complete           |  | 1/29/2016              |   | No                                  |  |
| 101         | Set Unit 2 Containment Vessel #3   | 8/23/2016          | 3/21/2017                                |                        | +7 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description   | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes  |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|--|
| 102         | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2   | Complete           |  | 1/16/2015              |   | No                                  |  |
| 103         | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2                               | Complete           |  | 5/28/2013              |   | No                                  |  |
| 104         | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3                             | Complete           |  | 3/28/2015              |   | No                                  |  |
| 105         | Polar Crane - Shipment of Equipment to Site - Unit 2   | 12/31/2015         | 1/15/2017                                |                        | +13 Month(s)                              | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 106         | Receive Unit 2 Reactor Vessel on site from fabricator  | Complete           |  | 7/31/2013              |   | No                                  |  |
| 107         | Set Unit 2 Reactor Vessel  | Complete           |  | 8/30/2016              |   | No                                  |  |
| 108         | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | Complete           |  | 4/24/2015              |   | No                                  |  |
| 109         | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3                        | Complete           |  | 8/30/2016              |   | No                                  |  |
| 110         | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2                                  | 5/30/2016          | 2/28/2017                                |                        | +9 Month(s)                               | No                                  | Delayed due to required bearing design revision.             |
| 111         | Place first nuclear concrete for Unit 3  | Complete           |  | 11/2/2013              |   | No                                  |  |
| 112         | Set Unit 2 Steam Generator   | 10/10/2016         | 12/21/2016                               |                        | +2 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 113         | Main Transformers Ready to Ship - Unit 2   | Complete           |  | 7/31/2013              |   | No                                  |  |
| 114         | Complete Unit 3 Steam Generator Hydrotest at fabricator  | Complete           |  | 8/21/2015              |   | No                                  |  |
| 115         | Set Unit 2 Containment Vessel Bottom Head on basemat legs  | Complete           |  | 5/22/2013              |   | No                                  |  |
| 116         | Set Unit 2 Pressurizer Vessel  | 8/23/2016          | 5/26/2017                                |                        | +9 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 117         | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3      | 1/31/2017          | 7/1/2017                                 |                        | +6 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |

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

**Appendix 1**  
**VC Summer Units 2 and 3**

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|-------------|--|--------------------|--|------------------------|---|-------------------------------------|--|
| 118         | Deliver Reactor Vessel Internals to Port of Export - Unit 3                    | 12/31/2016         | 8/31/2017                                |                        | +8 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 119         | Main Transformers Fabricator Issue PO for Material - Unit 3                    | Complete           |  | 1/15/2015              |   | No                                  |  |
| 120         | Complete welding of Unit 2 Passive Residual Heat Removal System piping         | 1/16/2017          | 8/3/2017                                 |                        | +7 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 121         | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 3 | 1/30/2016          | 2/10/2017                                |                        | +13 Month(s)                              | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 122         | Refueling Machine - Shipment of Equipment to Site - Unit 3                     | 3/27/2016          | 6/30/2017                                |                        | +15 Month(s)                              | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 123         | Set Unit 2 Polar Crane   | 12/19/2016         | 10/6/2017                                |                        | +10 Month(s)                              | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 124         | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3                 | 4/30/2017          | 9/1/2017                                 |                        | +5 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 125         | Main Transformers Ready to Ship - Unit 3                                       | Complete           |  | 7/29/2015              |   | No                                  |  |
| 126         | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3                | Complete           |  | 9/3/2015               |   | No                                  |  |
| 127         | Start electrical cable pulling in Unit 2 Auxiliary Building                    | 11/29/2016         | 2/17/2017                                |                        | +3 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 128         | Complete Unit 2 Reactor Coolant System cold hydro                              | 2/19/2018          | 10/4/2018                                |                        | +8 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |
| 129         | Activate class 1E DC power in Unit 2 Auxiliary Building                        | 6/22/2017          | 1/28/2018                                |                        | +7 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing. |

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

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**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description   | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes  |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|--|
| 130         | Complete Unit 2 hot functional test                                    | 5/23/2018          | 1/5/2019                                 |                        | +8 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 131         | Install Unit 3 ring 3 for containment vessel                           | 2/27/2017          | 2/7/2018                                 |                        | +12 Month(s)                              | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 132         | Load Unit 2 nuclear fuel   | 12/21/2018         | 5/24/2019                                |                        | +5 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 133         | Unit 2 Substantial Completion  | 6/19/2019          | 8/31/2019                                |                        | +2 Month(s)                               | No                                  | WEC is anticipated to achieve substantial completion by the contractually guaranteed date through schedule mitigation. |
| 134         | Set Unit 3 Reactor Vessel  | 5/26/2017          | 11/9/2017                                |                        | +6 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 135         | Set Unit 3 Steam Generator #2  | 9/22/2017          | 1/23/2018                                |                        | +4 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 136         | Set Unit 3 Pressurizer Vessel  | 11/27/2017         | 3/16/2018                                |                        | +4 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 137         | Complete welding of Unit 3 Passive Residual Heat Removal System piping | 1/29/2018          | 3/28/2018                                |                        | +2 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |
| 138         | Set Unit 3 polar crane   | 12/18/2017         | 5/10/2018                                |                        | +5 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.   |

Legend  = Completed  = Completed this Quarter  = Movement in Days Only

**Appendix 1**  
**VC Summer Units 2 and 3**

| Tracking ID | Order No. 2015-661 Description                           | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes   |
|-------------|--|--------------------|--|------------------------|---|-------------------------------------|---|
| 139         | Start Unit 3 Shield Building roof slab rebar placement   | 5/11/2018          | 7/7/2019                                 |                        | +14 Month(s)                              | No                                  | The contractor requested to reset the approved date to align this milestone with the correct activity in the construction schedule. |
| 140         | Start Unit 3 Auxiliary Building electrical cable pulling | 6/23/2017          | 8/17/2017                                |                        | +2 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 141         | Activate Unit 3 Auxiliary Building class 1E DC power     | 3/13/2018          | 9/2/2018                                 |                        | +6 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 142         | Complete Unit 3 Reactor Coolant System cold hydro        | 2/26/2019          | 6/30/2019                                |                        | +4 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 143         | Complete Unit 3 hot functional test                      | 5/26/2019          | 9/26/2019                                |                        | +4 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 144         | Complete Unit 3 nuclear fuel load                        | 12/19/2019         | 2/7/2020                                 |                        | +2 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 145         | Begin Unit 3 full power operation                        | 5/20/2020          | 6/23/2020                                |                        | +1 Month(s)                               | No                                  | Delay due to schedule refinement and schedule re-sequencing.  |
| 146         | Unit 3 Substantial Completion                            | 6/16/2020          | 8/31/2020                                |                        | +2 Month(s)                               | No                                  | WEC is anticipated to achieve substantial completion by the contractually guaranteed date through schedule mitigation.              |




Legend  = Completed  = Completed this Quarter  = Movement in Days Only

16-3Q

# Appendix 1 VC Summer Units 2 and 3

| Tracking ID | Order No. 2015-661 Description | Order No. 2015-661 | 16-3Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2015-661 Date | Outside +18/-24 Months Contingency? | Notes |
|-------------|--------------------------------|--------------------|--|------------------------|---|-------------------------------------|-------|
|-------------|--------------------------------|--------------------|--|------------------------|---|-------------------------------------|-------|

| SUMMARY  |     |        |       |     |
|--|-----|--------|-------|-----|
| Total Milestones Completed                         | 113 | out of | 146 = | 77% |
| Milestone Movement - Order No. 2015-661 vs. 16-3Q: |     |        |       |     |
| a) Forward Movement                                | 33  | out of | 146 = | 23% |
| b) Backward Movement                               | 0   | out of | 146 = | 0%  |
| Milestones Within +12 to +18 Month range           | 5   | out of | 146 = | 3%  |

Legend  = Completed  = Completed this Quarter  = Movement in Days Only

## **APPENDIX 2**

### **V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

#### **Quarter Ending September 30, 2016**

**Appendix 2** is an updated and expanded version of the information contained in the capital cost schedule approved by the Commission in Order No. 2015-661.

**Appendix 2** shows:

1. The actual expenditures on the project by plant cost category through the current period.
2. The changes in capital costs reflecting the Company's current forecast of expenditures on the project for each future period by plant cost category. In updating its cost projections the Company has used the current construction schedule for the project and the Commission-approved inflation indices as set forth in **Appendix 4** to this report.
3. The cumulative CWIP for the project and the balance of CWIP that is not yet reflected in revised rates.
4. The current rate for calculating AFUDC computed as required under applicable FERC regulations.

The Cumulative Project Cash Flow target as approved in Order No. 2015-661 and as updated for escalation and other Commission-approved adjustments is found under the heading **"Per Order 2015-661 Adjusted."** The adjustments reflect:

1. Changes in inflation indices.
2. Budget Carry-Forward Adjustments used, where appropriate to track the effect of lower-than-expected cumulative costs on the future cumulative cash flow of the project.

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the current construction schedule and forecast of year-by-year costs going forward. This information is found under the heading **"Actual through September 2016 plus Projected."**

Appendix 2

**RESTATED and UPDATED CONSTRUCTION EXPENDITURES**

(Thousands of \$)

**V.C. Summer Units 2 and 3 - Summary of SCE&G Capital Cost Components**

| <b>Per Order 2015-661 Adjusted</b>                                       | <b>Total</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b>      | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> | <b>2019</b> | <b>2020</b> |
|--|--------------|-------------|-------------|-------------|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Annual Project Cash Flow(per order)</b>                               | 6,547,124    | 21,723      | 100,905     | 340,003     | 398,551          | 349,061     | 562,946     | 537,569     | 511,966     | 939,674     | 1,007,237   | 899,260     | 541,365     | 262,510     | 74,354      |
| <b>Capital Cost Rescheduling Contingency</b>                             | -            | -           | -           | -           | -                | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Budget Carry-Forward Adjustment</b>                                   | -            | -           | -           | -           | -                | -           | -           | -           | -           | -           | -           | -           | -           | -           | -           |
| <b>Net</b>   | 6,547,124    | 21,723      | 100,905     | 340,003     | 398,551          | 349,061     | 562,946     | 537,569     | 511,966     | 939,674     | 1,007,237   | 899,260     | 541,365     | 262,510     | 74,354      |
| <b>Adjusted for Change in Escalation</b>                                 | 6,482,126    | 21,723      | 100,905     | 340,003     | 398,551          | 349,061     | 562,946     | 537,569     | 511,966     | 939,949     | 979,672     | 873,801     | 531,800     | 260,088     | 74,091      |
| <b>Cumulative Project Cash Flow(Target)</b>                              |              | 21,723      | 122,629     | 462,632     | 861,183          | 1,210,244   | 1,773,190   | 2,310,759   | 2,822,725   | 3,762,674   | 4,742,347   | 5,616,147   | 6,147,947   | 6,408,035   | 6,482,126   |
| <b>Actual through September 2016* plus Projected</b>                     |              |             |             |             |                  |             |             |             |             |             |             |             |             |             |             |
| <b>Plant Cost Categories</b>   | <b>Total</b> | <b>2007</b> | <b>2008</b> | <b>2009</b> | <b>2010</b>      | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>2017</b> | <b>2018</b> | <b>2019</b> | <b>2020</b> |
| Fixed with No Adjustment   | 3,657,458    | 4,628       | 35,199      | 22,066      | 67,394           | 50,551      | 66,057      | 22,960      | 11,634      | 366,348     | 726,898     | 1,137,231   | 756,960     | 325,881     | 63,652      |
| Firm with Fixed Adjustment A   | 266,750      | -           | -           | 63,250      | 27,500           | 24,200      | 75,075      | 42,900      | 7,700       | 26,125      | -           | -           | -           | -           | -           |
| Firm with Fixed Adjustment B   | 238,868      | -           | 5,499       | 35,768      | 49,513           | 39,371      | 45,043      | 31,048      | 22,834      | 9,791       | -           | -           | -           | -           | -           |
| Firm with Indexed Adjustment   | 873,741      | -           | 45,869      | 148,713     | 115,172          | 137,871     | 118,769     | 150,530     | 129,994     | 26,822      | 0           | -           | -           | -           | -           |
| Actual Craft Wages   | 133,306      | -           | 312         | 1,937       | 9,779            | 11,682      | 21,091      | 25,217      | 38,785      | 24,503      | 0           | -           | -           | -           | -           |
| Non-Labor Costs  | 406,936      | -           | 1,271       | 31,255      | 79,778           | 9,298       | 65,227      | 70,154      | 105,390     | 44,564      | (0)         | -           | -           | -           | -           |
| Time & Materials   | 60,816       | -           | 1,013       | 155         | 1,004            | 764         | 1,878       | 2,300       | 4,055       | 2,048       | 6,761       | 9,413       | 24,329      | 6,686       | 410         |
| Owners Costs   | 837,364      | 17,096      | 8,198       | 15,206      | 23,743           | 29,276      | 43,643      | 47,245      | 51,807      | 56,885      | 95,269      | 152,701     | 127,821     | 106,102     | 62,372      |
| Transmission Costs   | 329,512      | -           | 26          | 724         | 927              | 11,964      | 51,677      | 56,593      | 46,439      | 44,401      | 50,041      | 48,580      | 18,140      | -           | -           |
| <b>Total Base Project Costs(2007 \$)</b>                                 | 6,804,751    | 21,723      | 97,386      | 319,073     | 374,810          | 314,977     | 488,461     | 448,947     | 418,639     | 601,486     | 878,970     | 1,347,925   | 927,250     | 438,669     | 126,434     |
| <b>Total Project Escalation</b>  | 528,714      | -           | 3,519       | 20,930      | 23,741           | 34,084      | 74,485      | 88,622      | 93,326      | 54,891      | 22,120      | 32,730      | 42,951      | 23,648      | 13,667      |
| <b>Total Revised Project Cash Flow</b>                                   | 7,333,465    | 21,723      | 100,905     | 340,003     | 398,551          | 349,061     | 562,946     | 537,569     | 511,965     | 656,378     | 901,090     | 1,380,656   | 970,201     | 462,316     | 140,101     |
| <b>Cumulative Project Cash Flow(Revised)</b>                             |              | 21,723      | 122,629     | 462,632     | 861,183          | 1,210,244   | 1,773,190   | 2,310,759   | 2,822,724   | 3,479,101   | 4,380,191   | 5,760,847   | 6,731,048   | 7,193,364   | 7,333,465   |
| <b>AFUDC(Capitalized Interest)</b>                                       | 340,234      | 645         | 3,497       | 10,564      | 17,150           | 14,218      | 18,941      | 27,722      | 26,131      | 22,202      | 33,523      | 72,049      | 59,929      | 24,740      | 8,923       |
| <b>Gross Construction</b>  | 7,673,698    | 22,368      | 104,403     | 350,567     | 415,701          | 363,278     | 581,886     | 565,291     | 538,096     | 678,580     | 934,613     | 1,452,705   | 1,030,129   | 487,056     | 149,024     |
| <b>Construction Work in Progress</b>                                     |              | 22,368      | 126,771     | 477,338     | 893,039          | 1,256,317   | 1,838,203   | 2,403,495   | 2,941,590   | 3,620,170   | 4,554,784   | 6,007,489   | 7,037,618   | 7,524,674   | 7,673,698   |
| <b>CWIP Currently in Rates</b>   |              |             |             |             | <b>3,214,067</b> |             |             |             |             |             |             |             |             |             |             |
| <b>September 30, 2016 Actual Incremental CWIP Not Currently in Rates</b> |              |             |             |             | <b>1,001,412</b> |             |             |             |             |             |             |             |             |             |             |

\*Applicable index escalation rates for 2016 are estimated. Escalation is subject to restatement when actual indices for 2016 are final.

**Notes:**

2016-2020 AFUDC rate applied

5.82%

The AFUDC rate applied is the current forecasted SCE&G rate. AFUDC rates can vary with changes in market interest rates, SCE&G's embedded cost of capital, capitalization ratios, construction work in process, and SCE&G's short-term debt outstanding.



### **APPENDIX 3**

#### **V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2016**

For comparison purposes, **Appendix 3** provides the schedule of capital costs for the project which was approved by the Commission in Order No. 2015-661 as the Approved Capital Cost of the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(2). **Appendix 3** also reflects the forecast of AFUDC expense based on these adjusted schedules and the AFUDC rates that were current at the time of Order No. 2015-661. **Appendix 3** is intended to provide a fixed point of reference for future revisions and updating. While the schedule of costs contained on **Appendix 3** is subject to revision for escalation, changes in AFUDC rates and amounts, capital cost scheduling contingencies and other contingency adjustments as authorized in Order No. 2009-104(A), no such adjustments have been made to the schedules presented here.

# Appendix 3

## RESTATED and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of \$)

### V.C. Summer Units 2 and 3 - Summary of SCE&G Capital Cost Components

Per Order 2015-661

|  | Total     | Actual |         |         |         |           |           |           |           | Projected |           |           |           |           |           |
|--|-----------|--------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  |           | 2007   | 2008    | 2009    | 2010    | 2011      | 2012      | 2013      | 2014      | 2015      | 2016      | 2017      | 2018      | 2019      | 2020      |
| <b>Plant Cost Categories</b>                 |           |        |         |         |         |           |           |           |           |           |           |           |           |           |           |
| Fixed with No Adjustment                     | 255,517   | 4,628  | 35,199  | 22,066  | 67,394  | 50,551    | 66,057    | 22,960    | 11,634    | 29,965    | 20,934    | 9,600     | 56        | (42,763)  | (42,763)  |
| Firm with Fixed Adjustment A                 | 266,750   | -      | -       | 63,250  | 27,500  | 24,200    | 75,075    | 42,900    | 7,700     | 26,125    | -         | -         | -         | -         | -         |
| Firm with Fixed Adjustment B                 | 403,936   | -      | 5,499   | 35,768  | 49,513  | 39,371    | 45,043    | 31,048    | 22,834    | 50,203    | 45,095    | 26,827    | 27,858    | 19,537    | 5,339     |
| Firm with Indexed Adjustment                 | 1,545,998 | -      | 45,869  | 148,713 | 115,172 | 137,871   | 118,769   | 150,530   | 129,994   | 240,391   | 197,013   | 138,958   | 44,043    | 51,832    | 26,842    |
| Actual Craft Wages                           | 599,213   | -      | 312     | 1,937   | 9,779   | 11,682    | 21,091    | 25,217    | 39,418    | 83,130    | 127,343   | 161,221   | 95,431    | 22,652    | -         |
| Non-Labor Costs                              | 952,562   | -      | 1,271   | 31,255  | 79,778  | 9,298     | 65,227    | 70,154    | 107,188   | 132,987   | 171,543   | 165,087   | 95,771    | 22,781    | 223       |
| Time & Materials                             | 85,781    | -      | 1,013   | 155     | 1,004   | 764       | 1,878     | 2,300     | 4,131     | 19,466    | 26,292    | 17,574    | 8,685     | 2,384     | 136       |
| Owners Costs                                 | 807,369   | 17,096 | 8,198   | 15,206  | 23,743  | 29,276    | 43,643    | 47,245    | 51,970    | 96,136    | 106,297   | 109,367   | 117,263   | 93,417    | 48,512    |
| Transmission Costs                           | 329,512   | -      | 26      | 724     | 927     | 11,964    | 51,677    | 56,593    | 47,207    | 64,576    | 64,794    | 30,314    | 710       | -         | -         |
| <b>Total Base Project Costs(2007 \$)</b>     | 5,246,638 | 21,723 | 97,386  | 319,073 | 374,810 | 314,977   | 488,461   | 448,947   | 422,076   | 742,980   | 759,311   | 658,948   | 389,817   | 169,840   | 38,289    |
| <b>Total Project Escalation</b>              | 1,300,486 | -      | 3,519   | 20,930  | 23,741  | 34,084    | 74,485    | 88,622    | 89,890    | 196,694   | 247,926   | 240,312   | 151,548   | 92,670    | 36,065    |
| <b>Total Revised Project Cash Flow</b>       | 6,547,124 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061   | 562,946   | 537,569   | 511,966   | 939,674   | 1,007,237 | 899,260   | 541,365   | 262,510   | 74,354    |
| <b>Cumulative Project Cash Flow(Revised)</b> |           | 21,723 | 122,629 | 462,632 | 861,183 | 1,210,244 | 1,773,190 | 2,310,759 | 2,822,725 | 3,762,398 | 4,769,635 | 5,668,895 | 6,210,260 | 6,472,770 | 6,547,124 |
| <b>AFUDC(Capitalized Interest)</b>           | 279,790   | 645    | 3,497   | 10,564  | 17,150  | 14,218    | 18,941    | 27,722    | 26,131    | 30,502    | 44,426    | 39,884    | 30,984    | 11,529    | 3,599     |
| <b>Construction Work in Progress</b>         |           | 22,368 | 126,771 | 477,338 | 893,039 | 1,256,317 | 1,838,203 | 2,403,495 | 2,941,591 | 3,911,767 | 4,963,430 | 5,902,573 | 6,474,923 | 6,748,962 | 6,826,914 |

## **APPENDIX 4**

### **V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2016**

**Appendix 4** shows the changes in the inflation indices approved in Order No. 2009-104(A). Included is a ten year history of the Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index. The change in the relevant indices from the Combined Application is also provided.

## Appendix 4, Chart A

### Inflation Indices, Chart A

HW All Steam Generation Plant Index, January 2016

| <u>Year</u> | <u>Index</u> | <u>Yr/Yr change</u> | <u>Three Year Average</u> | <u>Five Year Average</u> | <u>Ten Year Average</u> |
|-------------|--------------|---------------------|---------------------------|--------------------------|-------------------------|
| 2016        | 635          | 2.58%               | 1.53%                     | 2.79%                    | 3.76%                   |
| 2015        | 619          | 3.17%               | 2.28%                     | 2.94%                    | 4.08%                   |
| 2014        | 600          | -1.15%              | 2.73%                     | 2.05%                    | 3.76%                   |
| 2013        | 607          | 4.84%               | 4.24%                     | 3.25%                    |                         |
| 2012        | 579          | 4.51%               | 2.19%                     | 3.91%                    |                         |
| 2011        | 554          | 3.36%               | 2.30%                     | 4.73%                    |                         |
| 2010        | 536          | -1.29%              | 3.89%                     | 5.21%                    |                         |
| 2009        | 543          | 4.83%               | 7.19%                     | 5.47%                    |                         |
| 2008        | 518          | 8.14%               | 7.50%                     |                          |                         |
| 2007        | 479          | 8.62%               | 4.79%                     |                          |                         |
| 2006        | 441          | 5.76%               |                           |                          |                         |
| 2005        | 417          |                     |                           |                          |                         |

#### HW All Steam Index:

One year  
Five Year

| <b>BLRA<br/>Filing<br/><u>Jul-07</u></b> | <b>Order 2010-12<br/><u>Jan-09</u></b> | <b>Order 2011-345<br/><u>Jul-10</u></b> | <b>Order 2012-884<br/><u>Jan-12</u></b> | <b>Order 2015-661<br/><u>Jul-14</u></b> | <b>Update<br/><u>Jan-16</u></b> |
|--|--|---|---|---|---------------------------------|
| <b>7.68%</b>                             | <b>4.83%</b>                           | <b>4.79%</b>                            | <b>4.51%</b>                            | <b>2.52%</b>                            | <b>2.58%</b>                    |
| <b>5.74%</b>                             | <b>7.19%</b>                           | <b>5.31%</b>                            | <b>3.91%</b>                            | <b>3.21%</b>                            | <b>2.79%</b>                    |

## Appendix 4, Chart B

### Inflation Indices, Chart B

HW All Steam and Nuclear Generation Plant Index, January 2016

| <u>Year</u> | <u>Index</u> | <u>Yr/Yr change</u> | <u>Three Year Average</u> | <u>Five Year Average</u> | <u>Ten Year Average</u> |
|-------------|--------------|---------------------|---------------------------|--------------------------|-------------------------|
| 2016        | 636          | 2.75%               | 1.53%                     | 2.86%                    | 3.80%                   |
| 2015        | 619          | 3.17%               | 2.35%                     | 2.95%                    | 4.10%                   |
| 2014        | 600          | -1.32%              | 2.80%                     | 2.09%                    | 3.79%                   |
| 2013        | 608          | 5.19%               | 4.29%                     | 3.32%                    |                         |
| 2012        | 578          | 4.52%               | 2.20%                     | 3.87%                    |                         |
| 2011        | 553          | 3.17%               | 2.30%                     | 4.74%                    |                         |
| 2010        | 536          | -1.11%              | 3.89%                     | 5.26%                    |                         |
| 2009        | 542          | 4.84%               | 7.21%                     | 5.48%                    |                         |
| 2008        | 517          | 7.93%               | 7.52%                     |                          |                         |
| 2007        | 479          | 8.86%               | 4.88%                     |                          |                         |
| 2006        | 440          | 5.77%               |                           |                          |                         |
| 2005        | 416          |                     |                           |                          |                         |

#### HW All Steam/Nuclear Index:

One year  
Five Year

| <b>BLRA<br/>Filing<br/><u>Jul-07</u></b> | <b>Order 2010-12<br/><u>Jan-09</u></b> | <b>Order 2011-345<br/><u>Jul-10</u></b> | <b>Order 2012-884<br/><u>Jan-12</u></b> | <b>Order 2015-661<br/><u>Jul-14</u></b> | <b>Update<br/><u>Jan-16</u></b> |
|--|--|---|---|---|---------------------------------|
| <b>7.69%</b>                             | <b>4.84%</b>                           | <b>4.60%</b>                            | <b>4.52%</b>                            | <b>2.52%</b>                            | <b>2.75%</b>                    |
| <b>5.75%</b>                             | <b>7.20%</b>                           | <b>5.32%</b>                            | <b>3.87%</b>                            | <b>3.21%</b>                            | <b>2.86%</b>                    |

## Appendix 4, Chart C

### Inflation Indices, Chart C

HW All Transmission Plant Index, January 2016

| <u>Year</u> | <u>Index</u> | <u>Yr/Yr change</u> | <u>Three Year Average</u> | <u>Five Year Average</u> | <u>Ten Year Average</u> |
|-------------|--------------|---------------------|---------------------------|--------------------------|-------------------------|
| 2016        | 619          | 1.48%               | 1.22%                     | 1.89%                    | 3.11%                   |
| 2015        | 610          | 2.52%               | 1.82%                     | 1.88%                    | 3.81%                   |
| 2014        | 595          | -0.34%              | 1.81%                     | 0.55%                    | 3.56%                   |
| 2013        | 597          | 3.29%               | 2.40%                     | 2.10%                    |                         |
| 2012        | 578          | 2.48%               | -0.07%                    | 3.00%                    |                         |
| 2011        | 564          | 1.44%               | 1.57%                     | 4.33%                    |                         |
| 2010        | 556          | -4.14%              | 3.68%                     | 5.74%                    |                         |
| 2009        | 580          | 7.41%               | 8.11%                     | 6.57%                    |                         |
| 2008        | 540          | 7.78%               | 8.48%                     |                          |                         |
| 2007        | 501          | 9.15%               | 5.89%                     |                          |                         |
| 2006        | 459          | 8.51%               |                           |                          |                         |
| 2005        | 423          |                     |                           |                          |                         |

| <u>HW All Transmission Plant Index</u> | <b>BLRA<br/>Filing<br/>Jul-07</b> | <u>Order 2010-12<br/>Jan-09</u> | <u>Order 2011-345<br/>Jul-10</u> | <u>Order 2012-884<br/>Jan-12</u> | <u>Order 2015-661<br/>Jul-14</u> | <u>Update<br/>Jan-16</u> |
|--|-----------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------------------|
| One year                               | 8.82%                             | 7.41%                           | 5.08%                            | 2.48%                            | 1.68%                            | 1.48%                    |
| Five Year                              | 6.86%                             | 8.60%                           | 5.23%                            | 3.00%                            | 2.63%                            | 1.89%                    |

**Appendix 4**  
**Inflation Indices, Chart D**  
**GDP Chained Price Index, 2016**

| SERIESTYPE   | UNIT       | SHORT LABEL   |  |  |  |  | ID       | 2009   | 2010         | 2011         | 2012         | 2013         | 2014         | 2015          | 2016          |
|--|------------|---|--|--|--|--|----------|--------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| <b>Chained Price Index--Gross Domestic Product</b> |            |   |  |  |  |  |          |        |              |              |              |              |              |               |               |
| U.S. Macro - 10 Year Baseline                      | (2009=100) | Chained price index-gross domestic product , Source: BEA , Units: index- 2009=100.0 |  |  |  |  | 45158933 | 100.00 | 101.23       | 102.79       | 104.70       | 106.45       | 108.43       | 109.62        | 110.96        |
| Annual Percent change                              |            |   |  |  |  |  |          |        | <b>1.23%</b> | <b>1.54%</b> | <b>1.86%</b> | <b>1.67%</b> | <b>1.86%</b> | <b>1.10%</b>  | <b>1.22%</b>  |
| 3-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              | 1.54%        | 1.69%        | 1.80%        | 1.54%         | 1.39%         |
| 5-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              |              |              | <b>1.63%</b> | <b>1.61%</b>  | <b>1.54%</b>  |
| <b>Consumer Price Index, All-Urban</b>             |            |   |  |  |  |  |          |        |              |              |              |              |              |               |               |
| U.S. Macro - 10 Year Baseline                      | Index      | Consumer price index, all-urban , Source: BLS , Units: - 1982-84=1.00               |  |  |  |  | 45158182 | 2.15   | 2.18         | 2.25         | 2.30         | 2.33         | 2.37         | 2.37          | 2.39          |
| Percent change                                     |            |   |  |  |  |  |          |        | <b>1.40%</b> | <b>3.21%</b> | <b>2.22%</b> | <b>1.30%</b> | <b>1.72%</b> | <b>0.00%</b>  | <b>0.84%</b>  |
| 3-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              | 2.28%        | 2.25%        | 1.75%        | 1.01%         | 0.85%         |
| 5-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              |              |              | <b>1.97%</b> | <b>1.69%</b>  | <b>1.22%</b>  |
| <b>Producer Price Index--Finished Goods</b>        |            |   |  |  |  |  |          |        |              |              |              |              |              |               |               |
| U.S. Macro - 10 Year Baseline                      | (1982=1.0) | Producer price index-finished goods , Source: BLS , Units: index- 1982=1.0          |  |  |  |  | 45159751 | 1.73   | 1.80         | 1.91         | 1.94         | 1.97         | 2.00         | 1.94          | 1.91          |
| Percent change                                     |            |   |  |  |  |  |          |        | <b>4.05%</b> | <b>6.11%</b> | <b>1.57%</b> | <b>1.55%</b> | <b>1.52%</b> | <b>-3.00%</b> | <b>-1.55%</b> |
| 3-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              | 3.91%        | 3.08%        | 1.55%        | 0.02%         | -1.01%        |
| 5-Year Annual Percent change                       |            |   |  |  |  |  |          |        |              |              |              |              | <b>2.96%</b> | <b>1.55%</b>  | <b>0.02%</b>  |

|                                |                                       |                         |                          |                          |                          |                  |
|--------------------------------|---------------------------------------|-------------------------|--------------------------|--------------------------|--------------------------|------------------|
|                                | <div>BLRA<br/>Filing<br/>Jul-07</div> | Order 2010-12<br>Jan-09 | Order 2011-345<br>Jul-10 | Order 2012-884<br>Jan-12 | Order 2015-661<br>Jul-14 | Update<br>Jul-16 |
| <u>GDP Chained Price Index</u> |                                       |                         |                          |                          |                          |                  |
| One year                       | 2.66%                                 | 2.24%                   | 0.43%                    | 2.11%                    | 1.55%                    | 1.22%            |
| Five Year                      | 2.81%                                 | 2.86%                   | 1.97%                    | 1.69%                    | 1.55%                    | 1.54%            |

## **APPENDIX 5**

### **V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2016**

**Appendix 5** indicates those LARs that have been submitted by SCE&G to the NRC for review. Included is the title of each LAR, a brief description of the change(s) associated with the LAR, the date the LAR was submitted to the NRC, and the status of the requests.



**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>         |
|---|---|-----------------------|-----------------------|
| LAR 12-01 - Additional Electrical Penetration Assemblies            | Provide additional penetrations of the Containment Vessel to allow sufficient space for electrical and instrument cables.   | 8/29/2012             | Approved on 7/1/2013  |
| LAR-12-02 - Tier 1 Table 3.3-1 Discrepancies                        | Conform the current ITAAC standards used to verify the shield building wall thickness to align with those approved in DCD Rev. 19.  | 9/26/2012             | Approved on 5/30/2013 |
| LAR 13-01 - Basemat Shear Reinforcement Design Spacing Requirements | Clarify the provisions for maximum spacing of the shear reinforcement in the basemat below the auxiliary building to be consistent with requirements shown in existing FSAR figures.  | 1/15/2013             | Approved on 2/26/2013 |
| LAR 13-02 - Basemat Shear Reinforcement Design Details              | Revises the requirements for development of basemat shear reinforcement in the licensing basis from ACI 349 Appendix B to ACI 318-11, Section 12.6. The use of ACI 318 criteria for headed reinforcement results in longer shear ties and thicker concrete in areas below the elevator pits and a sump in the nuclear island basemat.                           | 1/18/2013             | Approved on 3/1/2013  |
| LAR 13-03 - Turbine Building Eccentric and Concentric Bracing       | Revises the turbine building main area to use a mixed bracing system using eccentrically and concentrically braced frames as a means of preventing the turbine building from collapsing onto the Nuclear Island (NI) during a seismic event. The structural design code is also changed to a code that includes adequate provisions for the new bracing system. | 2/7/2013              | Approved on 7/1/2013  |
| LAR 13-04 - Reconciliation of Tier 1 Valve Differences              | Reconciles valve related information contained in Tier 1 material to be consistent with corresponding Tier 2 material currently incorporated in the UFSAR.  | 2/7/2013              | Approved on 9/3/2015  |

## Appendix 5

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic   | Description of Change  | Submittal Date | Status                |
|---|--|----------------|-----------------------|
| LAR 13-05 - Structural Modules Shear Stud Size and Spacing              | Revises Note 2 of UFSAR Figure 3.8.3-8, Sheet 1, which presents typical structural wall module details. This information needs to be changed to be consistent with the design basis calculations.            | 2/14/2013      | Approved on 5/23/2013 |
| LAR 13-06 - Primary Sampling System Changes                             | Alters the design of the Primary Sampling System (PSS) by replacing a check valve with a solenoid-operated gate valve, modifying the PSS inside-containment header and adding a PSS containment penetration. | 2/7/2013       | Approved on 8/22/2013 |
| LAR 13-07 - Changes to the Chemical and Volume Control System (CVS)     | Alters the design of the Chemical and Volume Control System (CVS) by adding/changing valves, separating the zinc and hydrogen injection paths and relocating the zinc injection point.                       | 3/13/2013      | Approved on 2/24/2014 |
| LAR 13-08 - Module Obstructions and Details                             | Withdrawn after review with NRC-see Letter NND-13-202.<br><i>Superseded by LAR 13-20.</i>  | 2/28/2013      | Withdrawn             |
| LAR 13-09 - Annex/Radwaste Building Layout Changes                      | Updates column line numbers on Annex Building Figures and changes the configuration of the Radwaste building by adding three bunkers for storage and merging two rooms.                                      | 2/27/2014      | Under NRC Review      |
| LAR 13-10 - Human Factors Engineering Integrated System Validation Plan | Revises referenced document APP-OCS-GEH-320 from Revision D to Revision 2.   | 3/13/2013      | Approved on 7/31/2014 |
| LAR 13-11 - NI Wall Reinforcement Criteria                              | Revises structural code criteria for anchoring reinforcement bar within the NI walls (adopts ACI-318 for this purpose).  | 3/26/2013      | Approved on 6/6/2013  |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>   | <b>Description of Change</b>  | <b>Submittal Date</b>          | <b>Status</b>          |
|--|---|--------------------------------|------------------------|
| LAR 13-12 - Fire Area Boundary Changes   | Revises various information to support fire area boundaries (HVAC information, stairwell changes, and other layout changes).  | 7/17/2013                      | Approved on 9/9/2014   |
| LAR 13-13 - Turbine Building Layout Changes  | Revises the door location, clarifies column line designations, changes floor to ceiling heights and increases elevations and wall thickness in certain areas.   | 7/30/2013                      | Approved on 5/12/2014  |
| LAR 13-14 - Turbine Building Battery Room and Electrical Changes                     | Revises the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) Increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Relocating equipment and moving Turbine Building (TB) first bay EDS Battery Room and Charger Room. The floor elevation increases from elevation 148'-0" to elevation 148'-10" to accommodate associated equipment cabling with this activity, and (3) Removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery. | 10/2/2013                      | Approved on 10/24/2014 |
| LAR 13-15 - Operator Break Room Configuration  | No description provided. This is no longer a LAR.   | Changed to a Non-LAR Departure |                        |
| LAR 13-16 - Revision to Human Factors Engineering Design Verification Plan (GEH-120) | Revises referenced document APP-OCS-GEH-120 from Revision B to Revision 1.  | 9/25/2013                      | Approved on 7/31/2014  |

## Appendix 5

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic   | Description of Change   | Submittal Date | Status                 |
|---|---|----------------|------------------------|
| LAR 13-17 - Revision to Human Factors Engineering Task Support Verification (GEH-220) | Revises referenced document APP-OCS-GEH-220 from Revision B to Revision 1.  | 9/25/2013      | Approved on 7/31/2014  |
| LAR 13-18 - Revision to Human Factors Engineering Issue Resolution Plan               | Revises APP-OCS-GEH-420 to make a number of changes in order to refine the process for capturing and resolving Human Engineering Discrepancies (HEDs) from that process document as described in Revision B.  | 10/3/2013      | Approved on 7/31/2014  |
| LAR 13-19 - Revision to Human Factors Engineering Plan                                | Revises APP-OCS-GEH-520 to make a number of changes in order to confirm aspects of the HSI and OCS design features that could not be evaluated in other Human Factors Engineering (HFE) V&V activities.   | 10/3/2013      | Approved on 7/31/2014  |
| LAR 13-20 - Modules / Stud Channel Obstructions Revision                              | Revises requirements for design spacing of shear studs and wall module trusses and the design of structural elements of the trusses such as angles and channels. These revisions are to address interferences and obstructions.   | 7/17/2013      | Approved on 11/19/2013 |
| LAR 13-21 - CA03 Module Design Differences  | Corrects inconsistencies between Tier 2* and Tier 2 information.  | 2/2/2014       | Approved on 4/17/2015  |
| LAR 13-22 - Annex Building Structure and Layout Changes                               | The proposed changes would revise the Combined Licenses (COLs) by (a) installing an additional nonsafety-related battery, (b) revising the annex building internal configuration by converting a shift turnover room to a battery room, adding an additional battery equipment room, and moving a fire area wall, (c) increasing the height of a room, and (d) increasing certain floor thicknesses. The proposed changes include reconfiguring existing rooms and related room, wall, and access path changes. | 12/4/2014      | Approved on 10/23/2015 |

The gaps in LAR number sequencing are due to the order of submittal to the NRC.

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>          |
|---|---|-----------------------|------------------------|
| LAR 13-23 - Reinforced Concrete (RC) to Steel Plate Composite Construction (SC) Connections | The proposed amendment would revise Tier 2* and associated Tier 2 material related to the design details of connections in several locations between the steel plate composite construction (SC) used for the shield building and the standard reinforced concrete (RC) walls, floors, and roofs of the auxiliary building and lower walls of the shield building.  | 7/11/2014             | Approved on 12/16/2014 |
| LAR 13-24 - Containment Internal Floor Module Connections                                   | The amendment request proposes to depart from UFSAR text and figures that describe the connections between floor modules and structural wall modules in the containment internal structures.  | 6/16/2016             | Under NRC Review       |
| LAR 13-25 - Tier 1 Editorial and Consistency Changes  | Revises information to correct consistency and editorial issues. This submittal does not contain any technical changes.   | 7/2/2013              | Approved on 7/31/2014  |
| LAR 13-26 - EP Rule Changes   | Revision to the Emergency Plan in order to comply with regulatory changes enacted by the Nuclear Regulatory Commission (NRC) in the Final Rule. These changes include the addition of text that 1) clarifies the distance of the Emergency Operations Facility (EOF) from the site, 2) updates the content of exercise scenarios to be performed at least once each exercise cycle, and 3) requires the Evacuation Time Estimate (ETE) to be updated annually between decennial censuses. | 12/17/2013            | Approved on 6/20/2014  |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>         |
|---|--|-----------------------|-----------------------|
| LAR 13-27 - Control Rod Drive Mechanism Latching Relays                                       | The proposed change would revise Combined License (COL) numbers NPF-93 and NPF-94 for Virgil C. Summer Nuclear Station, Units 2 & 3, respectively, to specify the use of Control Rod Drive Mechanism (CRDM) latching control relays (referred to as control relays herein) in lieu of field breakers to open the CRDM motor generator (MG) set generator field on a diverse actuation system (DAS) signal.   | 10/30/2014            | Approved on 6/10/2015 |
| LAR 13-28 - Piping Line Number Additions, Deletions, and Functional Capability Re-designation | The proposed changes revise the Combined License (COL) in regard to changes to the Automatic Depressurization System (ADS), the Passive Containment Cooling System (PCS), the Passive Core Cooling System (PXS), the Normal Residual Heat Removal System (RNS), the Containment Air Filtration System (VFS), Spent Fuel Pool Cooling System (SFS) and the Sanitary Discharge System (SDS) piping line numbers to reflect the as-designed configuration resulting from changes in piping layout or rerouting. The changes consist of adding or deleting piping line numbers of existing piping lines, or updating the functional capability classification of existing process flow lines for the tables. | 12/18/2014            | Approved on 1/20/2016 |
| LAR 13-29 - Consolidation of IDS Spare Battery Termination Boxes                              | The proposed changes revise COLs concerning the Class 1E dc and Uninterruptible Power Supply System (IDS). The proposed changes replace four Spare Termination Boxes (IDSS-DF-2, IDSS-DF-3, IDSS-DF-4, and IDSS-DF-5) with a single Spare Battery Termination Box (IDSS-DF-3), and make minor raceway and cable routing changes.   | 12/19/2014            | Approved on 4/25/2016 |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>         |
|---|--|-----------------------|-----------------------|
| LAR 13-31 - Relocation of Air Cooled Chiller Pump 3, VWS-MP-03  | The proposed changes modify the design of the low capacity Central Chilled Water Subsystem (VWS) by relocating Air Cooled Chiller Pump 3 (VWS-MP-03) and its associated equipment, including a new chemical feed tank, from the Auxiliary Building to the Annex Building.                  | 10/21/2015            | Under NRC Review      |
| LAR 13-32 - WLS Changes   | Clarifies the description of the WLS, including changing depiction of valves to be consistent with Tier 1 figure conventions, ensuring consistency between Tier 1 and Tier 2 descriptions, and clarifying the safety classification of the drain hubs.                                     | 8/30/2013             | Approved on 1/8/2014  |
| LAR 13-33 - Passive Core Cooling System (PXS) Condensate Return                                       | Withdrew LAR after NRC review, see letter NND-16-0200.   | 7/8/2014              | Withdrawn             |
| LAR 13-34 - Clarification of Tier 2* Material in HFE Documents  | The proposed changes reclassify portions of the five Tier 2* Human Factors (HF) Verification & Validation (V&V) planning documents listed in Updated Final Safety Analysis Report (UFSAR) Table 1.6-1 and Chapter 18, Section 18.11.2.   | 3/19/2014             | Approved on 10/8/2014 |
| LAR 13-35 - Update of Common Qualified (Common Q) Platform Software Program Manual and Topical Report | The newer revisions of WCAP-16096 and WCAP-16097 are being adopted for the AP1000 Protection and Safety Monitoring System (PMS) by adding them to the AP1000 licensing basis. This license amendment request (LAR) requests approval of the new and revised Tier 2 and Tier 2* UFSAR text. | 3/4/2016              | Under NRC Review      |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>   | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>          |
|--|--|-----------------------|------------------------|
| LAR 13-36 - CIM / DAS Diversity Clarification                            | The requested amendment proposed to depart from approved AP1000 Design Control Document (DCD) Tier 2* information as incorporated into the Updated Final Safety Analysis Report (UFSAR) by clarifying the position on design diversity, specifically human diversity, as related to the Component Interface Module (CIM) and Diverse Actuation System (DAS) design.            | 9/11/2014             | Approved on 7/17/2015  |
| LAR 13-37 - VCSNS Units 2 & 3 Tech Spec Upgrade                          | Revises Technical Specifications to closer align with the guidance of the Technical Specifications Task Force (TSTF) Writer's Guide for Plant-Specific Improved Technical Specifications, TSTF-GG-05-01, Revision 1, and with NUREG-1431, Standard Technical Specifications - Westinghouse Plants as updated by NRC approved generic changes.                                  | 12/4/2013             | Approved on 11/12/2014 |
| LAR 13-38 - ACI Code Compliance with Critical Sections Higher Elevations | Withdrawn after review with NRC-see Letter NND-13-0745.  | 11/7/2013             | Withdrawn              |
| LAR 13-39 - EPZ Expansion LAR  | This amendment proposes a change to the VCSNS Units 2&3 Radiation Emergency Plan (Plan). VCSNS proposes the following changes to the Units 2&3 Plan: expansion of the Emergency Planning Zone (EPZ) boundary, and revisions to the Evacuation Time Estimates (ETE) analysis and the Alert and Notification System (ANS) design reports to encompass the expanded EPZ boundary. | 5/18/2015             | Approved on 2/5/2016   |



**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>         |
|---|---|-----------------------|-----------------------|
| LAR 13-41 - Coating Thermal Conductivity                | Revises Design Control Document (DCD) Tier 2 information as incorporated into the Updated Final Safety Analysis Report (UFSAR) to allow use of a new methodology to determine the effective thermal conductivity resulting from oxidation of the inorganic zinc (IOZ) used in the containment vessel coating system.          | 11/26/2013            | Approved on 10/9/2015 |
| LAR 13-42 - Tier 1 Editorial and Consistency Changes #2 | Allows various changes to correct editorial errors in Tier 1 and promote consistency with the Updated Final Safety Analysis Report (Tier 2 information).  | 5/20/2014             | Approved on 3/10/2015 |
| LAR 14-01 - Auxiliary Building Roof and Floor Details   | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) to identify design details of the floors of the auxiliary building that may vary due to design and loading conditions, in accordance with code requirements. | 4/3/2014              | Approved on 7/18/2014 |
| LAR 14-02 - Wall 11 Design Related Changes              | This amendment request proposes changes to the design of auxiliary building Wall 11 and proposes other changes to the licensing basis for use of seismic Category II structures. This submittal requests approval of the license amendment necessary to implement these changes.  | 12/17/2015            | Approved on 5/31/2016 |
| LAR 14-03 - Tier 2* Editorial and Clarification Changes | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by making editorial and consistency corrections.   | 6/12/2014             | Approved 11/20/2015   |

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>          |
|---|---|-----------------------|------------------------|
| LAR 14-05 - Containment Internal Structural Module Design Details             | The requested amendment proposes to depart from Tier 2* information in the Updated Final Safety Analysis Report (UFSAR), plant-specific Tier 1 and corresponding COL Appendix C information, and involved UFSAR Tier 2 information to address changes in the UFSAR and design documents related to containment internal structural wall module design details.  | 7/17/2014             | Approved on 3/12/2015  |
| LAR 14-06 - Enclosures for Class 1E Electrical Penetrations in Middle Annulus | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by eliminating the Division A fire zone enclosure and adding three new fire zones for Divisions B, C, and D Class 1 E electrical penetration rooms.  | 6/20/2014             | Approved on 12/30/2014 |
| LAR 14-07 - CA04 Structural Module ITAAC Dimensions Change                    | The proposed amendment would allow changes to adjust the concrete wall thickness tolerances of four Nuclear Island walls found in Tier 1.   | 9/25/2014             | Approved on 8/24/2015  |
| LAR 14-08 - Integrated Test Program (ITP)                                     | The requested amendment requires changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document (DCD) Tier 2 information, and involves changes to related plant-specific Tier 1 information with corresponding changes to the associated COL information. Many of the changes in this amendment request are done in order to conform to the Tier 1 Section 3.4 exemption request described in Enclosure 2. In that change, construction and installation testing is removed from the ITP and replaced with component testing. | 10/23/2014            | Approved on 9/9/2015   |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>          |
|---|--|-----------------------|------------------------|
| LAR 14-09 - Turbine Building Switchgear Room and Office Layout Changes              | The requested amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by relocating fire area rated fire barriers due to changes to the layout of the switchgear rooms and office area in the turbine building. The requested amendment would also depart from plant-specific DCD Tier 2 material that involves the proposed Tier 2* departures.   | 9/18/2014             | Approved on 12/18/2015 |
| LAR 14-10 - Addition of Instruments to Design Reliability Assurance Program (D-RAP) | This license amendment request proposes to modify the existing feedwater controller logic to allow the controller program to respond as required to various plant transients while minimizing the potential for false actuation. The current configuration of the feedwater control system allows the startup feedwater (SFW) pumps to start upon initiation of a reactor trip. This proposed change will align the feedwater controller logic with the guidance in the Advanced Light Water Reactor Utility Requirements Document (ALWR URD). | 7/6/2015              | Approved on 5/2/2016   |
| LAR 14-11 - Debris Screen Related Dimensions  | The proposed changes are to information identifying the frontal face area and screen surface area for the In-Containment Refueling Water Storage Tank (IRWST) screens, the location and dimensions of the protective plate located above the containment recirculation (CR) screens, and increasing the maximum Normal Residual Heat Removal System (RNS) flowrate through the screens.  | 8/12/2016             | Under NRC Review       |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>         |
|---|---|-----------------------|-----------------------|
| LAR 14-12 - Core Makeup Tank Volume Inconsistency             | A change is proposed to revise the COL Appendix A (Technical Specifications) SR 3.5.2.2 and UFSAR to reflect a minimum CMT volume of 2487 ft <sup>3</sup> . This lower value is supported by the Small Break Loss of Coolant Accident (SBLOCA) safety analysis, the analysis in which minimum CMT volume is a critical parameter, and aligns with the current ITAAC value.  | 5/12/2016             | Under NRC Review      |
| LAR 14-13 - Proposed Emergency Action Levels                  | This LAR proposes that the license conditions be modified to allow SCE&G to submit plant-specific EALs developed using criteria from NEI 07-01, Rev 0 and NEI 99-01. The proposed changes, including the modification of VCSNS Units 2&3 License Conditions 2.D(12)(c) and submittal of the new plant-specific EALs for both units, do affect the VCSNS Units 2&3 Combined Licenses, but do not alter requirements of the Emergency Plan or Technical Specifications.                                       | 10/9/2015             | Under NRC Review      |
| LAR 14-14 - Structural Design of Auxiliary Building Floors    | Changes are proposed to the Updated Final Safety Analysis Report (UFSAR) descriptions and figures to address changes in the structural design of floors, including finned floors, in the auxiliary building. Changes include proposed modifications specific to the finned floors critical section, as well as additional clarification to define how similar finned floors other than the critical section and similar concrete on steel plate floors without fins can be different in the design details. | 6/16/2016             | Under NRC Review      |
| LAR 14-15 - Compressed and Instrument Air Supply Modification | The proposed change would revise the Combined Licenses (COLs) in regard to removing a supply line from the Compressed and Instrument Air System (CAS) to the generator breaker package and involves changes to related plant-specific Tier 1 information, with corresponding changes to associated COL Appendix C information.  | 10/30/2014            | Approved on 4/27/2016 |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b>          | <b>Status</b>         |
|---|---|--------------------------------|-----------------------|
| LAR 14-16 - Condensate Water Storage Tank Volume          | No description provided. This is no longer a LAR.   | Changed to a Non-LAR Departure |                       |
| LAR 14-17 - Core Reference Report Incorporation           | This amendment is requested in order to incorporate WCAP-17524-P-A, Revision 1, AP1000 Core Reference Report.   | 3/14/2016                      | Approved on 9/20/2016 |
| LAR 14-18 - Containment Hydrogen Igniter Changes          | The proposed departures consist of changes to plant-specific Tier 1 (and COL Appendix C) tables and UFSAR tables, text, and figures related to the addition of two hydrogen igniters above the In-Containment Refueling Water Storage Tank (IRWST) roof vents to improve hydrogen burn capabilities, incorporating consistency changes to a plant-specific Tier 1 table to clarify the minimum surface temperature of the hydrogen igniters and igniter location, removal of hydrogen igniters from the Protection and Safety Monitoring System (PMS) from a plant-specific Tier 1 table, and clarification of hydrogen igniter controls in a Tier 1 table. | 5/6/2015                       | Under NRC Review      |
| LAR 14-19 - HFE OSA Task Update and Removal of WCAP-15847 | Tier 2* document WCAP-15847 identifies documents that were used to support the AP1000 Design Certification. These documents have either been superseded or discontinued. Therefore, an amendment is being proposed to implement the necessary Tier 2* changes to delete WCAP-15847 from the UFSAR. In addition to this change, a Human Factors Engineering (HFE) Operational Sequence Analysis (OSA) task related to the Automatic Depressurization System (ADS) needs to be clarified.   | 1/27/2015                      | Approved on 6/2/2015  |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>   | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>         |
|--|--|-----------------------|-----------------------|
| LAR 15-01 - HFE V&V Plan Updates to Support ISV                                  | The proposed changes will resolve inconsistencies and implement changes identified during the review of Human Factors (HF) Verification and Validation (V&V) plans. These changes involve revising Tier 2* information contained within the Human Factors Engineering (HFE) Design Verification, Task Support Verification and Integrated System Validation (ISV) plans.   | 2/10/2015             | Approved on 9/23/2015 |
| LAR 15-03 - Main Control Room Emergency Habitability System (VES) Design Changes | The proposed changes revise the COLs concerning the design details of the Main Control Room Emergency Habitability System (VES). These proposed changes would revise ASME safety classification and transition location, equipment orientation and removal, and identification of the number of emergency air storage tanks.   | 6/30/2015             | Approved on 6/2/2016  |
| LAR 15-04 - Diverse Actuation System (DAS) Cabinet Changes                       | The proposed changes revise the licensing basis of the COLs to modify the design of the Diverse Actuation System (DAS) to be consistent with the DAS fire-induced spurious actuation (smart fire) and single point failure criteria. The DAS is proposed to be revised by reconfiguring the signal processing in the two processor cabinets currently located in the Annex Building and relocating the cabinets to the Auxiliary Building. The proposed changes also eliminate the instrument cabinet located in the Auxiliary Building. | 11/4/2015             | Approved on 8/19/2016 |
| LAR 15-05 - Tier 1 Editorial and Consistency Changes                             | The proposed changes would revise the Combined Licenses (COLs) by making various nontechnical changes to COL Appendix C and the corresponding plant-specific Tier 1 information along with one involved Updated Final Safety Analysis Report (UFSAR) Tier 2 change and one typographical change to COL paragraph 2.D.  | 5/16/2016             | Under NRC Review      |

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>          |
|---|---|-----------------------|------------------------|
| LAR 15-07 - Reclassification of Tier 2* Information on Fire Area Figures        | The requested amendment and exemption identify portions of the licensing basis that would more appropriately be classified as Tier 2, specifically the Tier 2* information on Fire Area Figures 9A-1, 9A-2, 9A-3, 9A-4, 9A-5, and 9A-201 in the VCSNS 2 and 3 Updated Final Safety Analysis Report.   | 5/4/2015              | Approved on 2/1/2016   |
| LAR 15-08 - Supplemental Requirements for Mechanical Coupler Weld Acceptability | The proposed change is that, using the AISC N690-1994 SLC of 1.6, rebar sizes #4, #5, and #6 C2/C3J couplers demonstrate the required weld capacity through analysis. For rebar sizes #7 through #11 C2/C3J couplers, this activity proposes testing as permitted by AISC N690-1994 Section Q1.22.2 to demonstrate the weld capacity for 125% of the specified yield strength loading of the rebar by performing a series of a minimum of six static and three cyclic tests on representative samples of each of the five sizes of the coupler-rebar- weld system.              | 8/24/2015             | Approved on 11/12/2015 |
| LAR 15-09 - Use of AWS D1.1-2000 Criteria for Structural Welds                  | The requested amendment proposes to depart from Tier 2* and associated Tier 2 information in the Updated Final Safety Analysis Report (UFSAR) (which includes the plant-specific DCD Tier 2 information) to revise the application of American Institute for Steel Construction (AISC) N690-1994, Specification for the Design, Fabrication and Erection of Steel Safety-Related Structures for Nuclear Facilities, to allow use of American Welding Society (AWS) D1.1-2000, Structural Welding Code-Steel, in lieu of the AWS D1.1-1992 edition identified in AISC N690-1994. | 5/26/2015             | Approved on 9/1/2015   |



## Appendix 5

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic   | Description of Change  | Submittal Date | Status               |
|---|--|----------------|----------------------|
| LAR 15-11 - Boric Acid Storage Tank Suction Point ITAAC Changes                     | The proposed departures consist of changes to plant-specific UFSAR Figure 9.3.6-1 Sheet 2 of 2 and COL Appendix C Table 2.3.2-4 related to the configuration of the boric acid storage tank (BAST) suction point. The change also aligns the Tier 1 Chemical and Volume Control System (CVS) makeup flow rate with previously approved Tier 2 information.   | 9/29/2016      | Under NRC Review     |
| LAR 15-15 - Radiologically Controlled Area Ventilation System (VAS) Design Changes  | The requested amendment proposes changes to the Radiologically Controlled Area Ventilation System (VAS) configuration and equipment list by relocating one radiation monitor and adding one radiation monitor.   | 12/17/2015     | Under NRC Review     |
| LAR 15-17 - Addition of New Turbine Building Sump Pumps to ITAAC                    | The proposed amendment would depart from plant-specific Tier 1 information by adding two turbine building sump pumps to accommodate the increased flow that will be experienced during condensate polishing system rinsing operations. The proposed change also indicates that there is more than one main turbine building sump. Because flow into the turbine building sumps may be radiologically contaminated, the turbine building sump pumps will cease operation if a high radiation signal is present. | 9/30/2015      | Under NRC Review     |
| LAR 15-18 - Revision to VCSNS Units 2 and 3 Plant-Specific Emergency Planning ITAAC | Changes to the plant-specific emergency planning ITAAC are proposed to remove the copies of DCD Table 7.5-1, "Post-Accident Monitoring System," and FSAR Table 7.5-201, "Post-Accident Monitoring System," and to replace the references to DCD Table 7.5-1 and FSAR Table 7.5-201 with UFSAR Table 7.5-1 in Table C.3.8-1 for ITAAC Numbers C.3.8.01.01.01, C.3.8.01.05.01.05 and C.3.8.01.05.02.04.  | 10/1/2015      | Approved on 5/2/2016 |



## Appendix 5

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic  | Description of Change   | Submittal Date | Status                |
|--|---|----------------|-----------------------|
| LAR 15-19 - Proposed Revision to Technical Specifications (TS) Section 5.0 Regarding Shift Supervisor Title Change | The proposed amendment will change Technical Specifications (TS) Section 5.0, "Administrative Controls" by revising the Shift Supervisor title to Shift Manager.  | 10/22/2015     | Approved on 2/29/2016 |
| LAR 15-20 - Increased Concrete Thickness Tolerance for Column Line J-1 and J-2 Walls above 66'-6"                  | The proposed change revises COL Appendix C (and plant-specific DCD Tier 1) Table 3.3-1 to change the tolerance for the concrete thickness of the column line J-1 and J-2 walls from $\pm 1$ inch to a tolerance of -1 inch and +4 inch for a length of 24 inches at the interface of these reinforced concrete walls to structural module connections at the CA20 module. | 1/14/2016      | Approved on 5/31/2016 |
| LAR 15-21 - Use of Localized Shoring for Composite Floors and Roof in the Auxiliary Building                       | The proposed change is to allow use of shoring for the metal deck in the vicinity of penetrations and other openings and as temporary supports in place of an incomplete wall.  | 1/19/2016      | Approved on 8/25/2016 |
| LAR 16-01 - Pressurizer Surge Line Testing   | The proposed changes to the UFSAR eliminate pressurizer spray line monitoring during pressurizer surge line first plant only testing. In addition, these proposed changes correct inconsistencies in testing purpose, testing duration, and the ability to leave equipment in place following the data collection period.   | 9/15/2016      | Under NRC Review      |
| LAR 16-02 - Passive Core Cooling System (PXS) Design Changes to Address Potential Gas Intrusion                    | The requested amendment proposes changes to the passive core cooling system (PXS), the normal residual heat removal system (RNS) and containment air filtration system (VFS) piping layout and routing design information.  | 6/2/2016       | Under NRC Review      |
| LAR 16-03 - Auxiliary Building Roof Rebar Configuration Design   | The requested amendment proposes to depart from Tier 2* information in the Updated Final Safety Analysis Report (UFSAR) (which includes the plant-specific DCD Tier 2 information) related to the roof rebar configuration design of the auxiliary building.  | 6/28/2016      | Under NRC Review      |

The gaps in LAR number sequencing are due to the order of submittal to the NRC.

## Appendix 5

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic   | Description of Change   | Submittal Date | Status           |
|---|---|----------------|------------------|
| LAR 16-04 - PMS Logic Changes for Source Range Flux Doubling  | This license amendment request (LAR) involves updates to the Protection and Safety Monitoring System (PMS) design to align it with the requirements in IEEE 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations." The PMS functional logic for blocking and resetting the source range neutron flux doubling signal requires revision to fully comply with this standard.  | 7/19/2016      | Under NRC Review |
| LAR 16-05 - Slab Thickness Changes between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0"              | The requested amendment proposes to change thickness of one floor in the auxiliary building located between Column Lines I to J-1 and 2 to 4 at Elevation 153'-0".  | 7/5/2016       | Under NRC Review |
| LAR 16-07 - Addition of Density Compensation to Reactor Trip System (RTS) Reactor Coolant Flow Signal         | The requested amendment proposes to depart from UFSAR text by adding compensation, for changes in reactor coolant density using the $\Delta T$ power signal, to the reactor coolant flow input signal for the low reactor coolant flow trip function of the Reactor Trip System (RTS). Additionally, Technical Specification (TS) Surveillance Requirement (SR) 3.3.1.3 is added to the surveillances required for the Reactor Coolant Flow-Low reactor trip in TS Table 3.3.1-1, Function 7. | 7/11/2016      | Under NRC Review |
| LAR 16-08 - Automatic Depressurization System (ADS) Stage 2, 3 & 4 Valve Flow Area Changes and Clarifications | The requested amendment proposes changes to a plant-specific Tier 1 (and COL Appendix C) table and UFSAR tables to clarify the flow area for the Automatic Depressurization System (ADS) fourth stage squib valves and to reduce the minimum effective flow area for the second and third stage ADS control valves.   | 9/2/2016       | Under NRC Review |

**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>  | <b>Description of Change</b>  | <b>Submittal Date</b> | <b>Status</b>    |
|---|---|-----------------------|------------------|
| LAR 16-11 - NDE for Welds of Stainless Steel Couplers to Embedment Plates | The proposed departures consist of changes to Tier 2* information in the UFSAR to clarify how the quality and strength of a specific set of couplers welded to stainless steel embedment plates, already installed and embedded in concrete, is demonstrated through visual examination and static tension testing, in lieu of the nondestructive examination requirements of American Institute of Steel Construction (AISC) N690. | 9/20/2016             | Under NRC Review |
| LAR 16-12 - Incorporate Revisions to WCAP-17179 in UFSAR Appendix 7A      | The proposed changes revise the Combined Licenses (COLs) to clarify information in WCAP-17179, "AP1000® Component Interface Module Technical Report" which demonstrates design compliance with licensing bases requirements. The requested amendment also proposes a change to the Component Interface Module (CIM) internal power supply which will enable proper functioning of the field programmable gate arrays (FPGA).        | 9/15/2016             | Under NRC Review |
| LAR 16-13 - Fire Pump Head and Diesel Fuel Day Tank Changes               | The proposed changes to COL Appendix C (and corresponding plant-specific DCD Tier 1 and Tier 2 information) involve changes to the required head for the two fire protection system (FPS) fire pumps and to the minimum volume of the diesel-driven fire pump's fuel day tank as described in the design commitment of Inspections, Tests, Analyses, and Acceptance (ITAAC) 2.3.04.08 and 2.3.04.09.                                | 9/8/2016              | Under NRC Review |
| LAR 16-14 - Design Reliability Assurance Program (D-RAP) Changes          | The proposed changes involve changes to the Design Reliability Assurance Program (D-RAP) to identify the covers for the IRWST vents and overflow weirs as the risk-significant components included in the D-RAP and to differentiate between the rod drive motor-generator (MG) sets field control relays and the rod drive power supply control cabinets in which the relays are located.  | 9/22/2016             | Under NRC Review |

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**Appendix 5****V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

| <b>Topic</b>                                   | <b>Description of Change</b>   | <b>Submittal Date</b> | <b>Status</b>    |
|--|--|-----------------------|------------------|
| LAR 16-16 - IDS Fuse Isolation Panel Additions | The proposed changes revise the details of the Class 1E dc and uninterruptible power supply system (IDS), specifically adding seven Class 1E fuse panels to the IDS design. These proposed changes provide electrical isolation between the non-Class 1E IDS battery monitors and their respective Class 1E battery banks. | 9/28/2016             | Under NRC Review |